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 Occupations: History: Instrumentation:
 Instrumentation Technicians: *Job Analysis: *Job
 Skills: Libraries: Library Personnel; Lumber
 Industry: Manufacturing: *Occupational Information:
 Petroleum Industry: Plastics: Political Science:
 Repair: Social Sciences: Sociology: *Task Analysis:
 Woodworking
 IDENTIFIERS Boats: Paper and Pulp Occupations: Shipbuilding
 Industry: Textile Industry

ABSTRACT

This second in a series of task analysis inventories contains checklists of work performed in twenty-two occupations. Each inventory is a comprehensive list of work activities, responsibilities, educational courses, machines, tools, equipment, and work aids used and the products produced or services rendered in a designated occupational area. The inventories can be used to set up work programs, write job descriptions, or be given to workers to check appropriate items in a self-inventory of their work. The information collected by use of the inventories may be helpful to job developers, counselors, and training and placement personnel. It also may be used in the development of curriculums for vocational or apprenticeship training. Occupations covered in this inventory series include aircraft and aerospace manufacturing; building and construction trades; chemical processing; economics and political science work; electrical equipment, apparatus, and devices manufacturing; electronic components, equipment, and apparatus manufacturing; plastics manufacturing; food processing; history, sociology, and anthropology work; instruments and apparatus manufacturing; knitting mill work; library work; logging; paper and paperboard converting; petroleum refining; sawmill and planning mill work; ship and boat building and repairing; textile mill work; veneer and plywood mill work; woodworking. (KC)

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Task Analysis Inventories, Series II



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Ray Marshall, Secretary
Employment and Training Administration
Ernest G. Green
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Preface

This is the second of a series of task analysis inventories, the first of which was printed in 1973.¹ The inventories are adaptations of the Job Information Matrix System (JIMS) developed during research conducted under contract with the Department of Labor and directed by Dr. Dale Yoder of the Bureau of Business Research at the Long Beach State University, Long Beach, and Dr. C. Harold Stone of the California State University, Los Angeles. The primary objective of the research was to investigate and determine the cost and effectiveness of various techniques and procedures of collecting job analysis data. As a result, JIMS has as a nucleus an organization of standardized tasks found in a particular activity or area of work.

Manpower program staffers have used Series I for purposes such as identifying tasks, developing jobs, and preparing job descriptions; providing information to counselees and trainees on specific tasks associated with different kinds of work; and developing training programs fostering entrance into fields of work that offer maximum employment opportunities.

Task Analysis Inventories was produced by the U.S. Employment Service, Division of Occupational Analysis. Adaline Padgett of the Division provided planning and technical coordination. Carl E. Wesson, Occupational Analyst, California Occupational Field Center (J. Edmond Phillips, Supervisor), drafted the document.

¹*Task Analysis Inventories* (Washington: U.S. Department of Labor, Manpower Administration, 1972).

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Introduction

USES OF INVENTORIES

The inventories provide a tool for identifying significant tasks and worker requirements. Data were obtained from job analysis studies, currently published occupational literature, professional associations, trade unions, and public and private sector organizations and establishments. The inventory is a comprehensive list of work activities, responsibilities, educational courses, machines, tools, equipment, and work aids used and the products produced or services rendered in a designated area. The user, after considering all of the items listed can determine those that are applicable. This is the second in a series of inventories to be developed for designated areas in the economy. Additional inventories will be developed and published in the future.

The inventories can be adapted to meet the various needs of work programs. For example, the user may become familiar with the lists of tasks in advance of a study then use the items as a guide to interviewing workers, supervisors, personnel management staff, or others from whom the user is obtaining job information. In some cases, the inventories may be given to workers to check appropriate items in a self-inventory of the work they perform.

The information resulting from use of the inventories may have relevance in activities other than basic job analysis. The inventories offer a quick method for preparation of job descriptions or assessing the need for, or feasibility of, job restructuring without undertaking detailed job analysis studies. If restructuring is performed, the items from the list may then serve as the framework for task identification and analysis, the basis for job restructuring.

Information collected from both the lists of tasks (activities) and the lists of machines, tools, equipment and work aids can be used to determine abilities and knowledges required for a specific job, which must be considered in the development of curricula for vocational or apprenticeship training.

The categories relating to educational requirements and courses that would develop workers' skills for performing the job duties, licensing requirements, and other similar information will be of assistance to counselors, job developers, training, and placement personnel.

For the lists to reflect complete information about the job, the users should always be encouraged to write in additional tasks or other pertinent items. Users should also be cautioned to analyze jobs as they exist and not attempt to make them fit the items.

ARRANGEMENT OF THE INVENTORIES

The task statements are not limited to any level of performance and may include activities that range from high-level supervision to elementary work. Some types of work exist in many fields of endeavor. Separate inventories have been prepared to represent these universal tasks (activities), such as "Administrative and Management" and "Clerical" (series I). In addition, many professional disciplines, such as Engineers, Economists, Mathematicians, and Scientists are utilized in both the public and private sectors. TASK ANALYSIS INVENTORIES have been, or are being, prepared for these disciplines such as "ARCHITECTURAL AND ENGINEERING WORK" (series I), "MATHEMATICS AND PHYSICAL SCIENCES WORK" (series I) and "PSYCHOLOGICAL RESEARCH."

The tasks, as well as additional items on the lists, are not arranged in alphabetical or chronological order, so the user will need to read and consider all the items.

Procedures for Completing Inventory Items

- Step 1. Select the task inventory which is pertinent to the job being studied.
- Step 2. Prepare a copy of each of the pages for the appropriate area of work.
- Step 3. Indicate in the upper right hand corner of the first page of the selected inventory the title(s) by which the job is commonly known.
- Step 4. Read each of the items listed on the inventory.
- Step 5. Indicate by an "X" in the box on the right of the line for each item, those that are pertinent to the job being studied.
- Step 6. Write in additional items or tasks found in the job but not listed in the inventory.

The items checked on the inventory may be used to provide the basis for preparation of a job description, in which case it may be desirable to code the job according to the classification structure contained in the *Dictionary of Occupational Titles*² developed by the U.S. Employment Service. Procedures for this purpose will be found on pages 27 and 28 of the *Handbook for Analyzing Jobs*, under the heading Procedure for Assigning and Recording Code.

In studying some jobs, the user may refer to more than one inventory. For example, a job in department store management may require reference items in two inventory lists — "Merchandising Work" and "Administrative and Management Work."

Among the inventory categories, union affiliation information is not consistently supplied.

²*Dictionary of Occupational Titles* (4th ed.; Washington: U.S. Department of Labor, Employment and Training Administration, 1977).

AIRCRAFT AND AEROSPACE MANUFACTURING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Supervises, and coordinates activities of, workers engaged in:

- Performing overall craftsmanship work to aid in developing and proving engineering design on prototype aero-astro products ☐
- Laying out and fabricating tooling for use in:
 - Producing of fabricated parts for product ☐
 - Bench assembly operations ☐
 - Final assembly operations ☐
- Machine fabrication or product or system parts ☐
- Hand fabrication or rework of product or system parts ☐
- Bench assembly or parts into units or subassemblies ☐
- Structural assembly of product ☐
- Installation of a specific system in product ☐
- Installation of propulsion power plant ☐
- Installation of power plant auxiliaries ☐
- Inspection of structural assemblies ☐
- Inspection and checkout of product or installed systems ☐
- Testing of materials and structural assemblies ☐
- Other (specify) ☐

Plans:

- Manpower requirements ☐
- Machine requirements ☐
- Material requirements ☐
- Tooling requirements ☐
- Other (specify) ☐

- Prepares work and worker schedules ☐
- Assigns workers to specific duties ☐
- Gives work directions to workers concerning assigned duties ☐
- Interprets specifications, work orders, and technical data for workers ☐
- Advises workers on methods and procedures for solving work problems ☐
- Reviews inspection and test reports on materials, assemblies, or products ☐
- Coordinates work activities with those of other departments ☐
- Enforces worker compliance with established procedures, regulations, and safety rules ☐
- Requisitions materials, tooling, and equipment ☐
- Requests repair or maintenance on tooling and machinery ☐

Trains workers in:

- Machine and equipment setup and operation ☐
- Bench assembly operations ☐
- Structural and final assembly operations ☐
- Installation of systems and system components ☐
- Inspection and checkout of systems ☐

WHAT THE WORKER DOES—Continued

- Inspection and final checkout of finished product ... ☐
- Evaluates worker performance ☐
- Initiates personnel actions, such as promotions, discharges, or disciplinary actions ☐
- Resolves employee grievances or submits them to higher authority ☐
- Other (specify) ☐

Reads or reviews:

- Engineering drawings ☐
- Design modification change sheets ☐
- Material processing orders ☐
- Tooling specifications ☐
- Tooling requirements ☐
- Fabricating specifications ☐
- Fabricating schedules ☐
- Bench assembly specifications ☐
- Bench assembly schedules and procedures ☐
- Structural assembly specifications ☐
- Structural assembly procedures ☐
- System installation specifications ☐
- Inspection specifications and procedures ☐
- Test specifications and operational checkout procedures ☐
- Other (specify) ☐

Lays out:

- Structural parts of product on lofting floor ☐
- Reference points and lines on material ☐
- Contour and angle requirements ☐
- Fabricating data on part ☐
- Patterns, templates, or design on material ☐
- System and plans for installation in product structure ☐
- Other (specify) ☐

Constructs or makes:

- Tooling required for fabrication and assembly operations ☐
- Wooden mock-up of prototype products ☐
- Patterns and templates for laying out, fabricating, or checking measurements of parts ☐
- Fixtures, jigs, and holding devices required for assembly activities ☐
- Models for testing aerodynamics of product ☐
- Forms for producing fabricating dies ☐
- Other (specify) ☐
- Sets up machines for operation by other workers ☐
- Sets up and operates metal working machines ☐
- Controls operation of automated machines ☐
- Controls equipment to process materials ☐
- Tends preset-up automatic machines ☐
- Operates preset-up machines ☐
- Assists worker to operate machine or equipment ☐
- Other (specify) ☐

Installs, aligns, and secures:

- Forming rolls ☐
- Stops ☐
- Guides ☐
- Fixtures ☐
- Cams ☐
- Gears ☐
- Shear blades ☐
- Saw blades ☐
- Machine attachments ☐
- Duplicating machine attachments ☐
- Tools in toolholders or machine heads ☐
- Workpiece in fixture, jig, holding device, or machine ☐
- Other (specify) ☐

Moves machine or equipment controls to:

- Start or stop operations ☐
- Set temperature, pressure, or time cycle specified .. ☐
- Set length of stroke on hydraulic ram ☐
- Feed tool or die onto workpiece ☐
- Adjust machine or equipment operations ☐
- Reset machine guides, stops, or roll clearances ☐
- Hoist, move, or position workpiece, die, or tooling .. ☐
- Other (specify) ☐

Monitors:

- Operation of machine from control console ☐
- Panelboard gages and meters for specified machine or equipment operation ☐
- Functional operation of machines ☐
- Machine operations controlled by on-line computer, numerical control, or tape ☐
- Closed circuit television receiver showing machine operations ☐
- Other (specify) ☐

Examines part for defects in fabrication or manufacture ☐

- Measures parts for conformance with dimensional specifications ☐
- Hand fabricates parts, using hand and power tools and work aids ☐
- Handworks parts to specifications by:
 - Filing ☐
 - Scraping ☐
 - Grinding ☐
 - Chipping ☐
 - Truing ☐
 - Straightening ☐
 - Lapping ☐
 - Honing ☐
 - Bending ☐
 - Bumping ☐
 - Planishing ☐
 - Polishing ☐

WHAT THE WORKER DOES—Continued

Buffing ☐
Other (specify) ☐

Furnishings in interior of structure ☐
Other (specify) ☐

Assembles:

Components of system equipment in units or subassemblies ☐

Fabricated sections of:

Air frame ☐
Fuselage ☐
Tail structure ☐
Rocket or missile housing ☐
Space craft module ☐

Structural sections of product into complete product structure ☐

Other (specify) ☐

Positions parts, materials, or housing unit in:

Holding device, fixture, or jig ☐
Specified relationship to other parts or material ☐
Specified alinement with other parts ☐
Other (specify) ☐

Verifies that parts or material meet specifications for:

Fit ☐
Alinement ☐
Tolerances and clearances ☐
Freedom of movement ☐
Tension between parts ☐
Contour and angle of material ☐
Other (specify) ☐

Secures parts or materials together during assembly using:

Screws ☐
Pins ☐
Dowels ☐
Solder ☐
Bolts and nuts ☐
Bonding agents ☐
Cement ☐
Cotter Keys ☐
Rivets ☐
Keyway press ☐
Laminating press ☐

Welds:

Flash welds ☐
Spot welds ☐
Bead welds ☐
Seam welds ☐
Other (specify) ☐

Installs:

System units in structure ☐
System hardware, connectors, and auxiliaries ☐
System instrumentation ☐

Inspects:

Materials ☐
Fabricated or machined parts ☐
Subassemblies ☐
Structures ☐
Systems ☐
Products ☐
Other (specify) ☐

Insures that inspected items meet specifications for:

Quality workmanship ☐
Assembly ☐
Installation ☐
Conformance with regulatory agency directives ☐
Completeness and accuracy ☐
Fit and relationship of parts ☐
Conformance with engineering design: ☐
and changes ☐
Ease and freedom of movement of parts ☐
Other (specify) ☐

Measures material, parts, or assemblies for specified:

Dimensional specifications, such as:
Width ☐
Length ☐
Height ☐
Thickness ☐
Radii ☐
Flatness ☐
Alinement ☐
Tolerances and clearances ☐
Shape and contour of material ☐
Coating thickness ☐
Other (specify) ☐

Tests:

Materials for conformance with physical characteristic specifications ☐
Parts or structures for internal defects, structural flaws, or material fatigue ☐
Subassemblies or system units for specified functional performance ☐
System installations for conformance with operational standards ☐
Instrument readings on systems with testing equipment readings ☐
Installed systems under simulated operating conditions ☐
Product under simulated flight conditions for specified performance ☐
Other (specify) ☐

WHAT THE WORKER DOES—Continued

Rejects or orders rework for items with:

- Faulty workmanship ☐
- Coating imperfections ☐
- Surface defects ☐
- Manufacturing defects ☐
- Assembly defects ☐
- Faulty installation ☐
- Damaged parts ☐
- Missing parts ☐
- Loose or faulty connections ☐
- Structural or internal flaws ☐
- Malfunctioning parts ☐
- Electrical characteristics not meeting standards ☐
- System operational malfunctions ☐
- Assembly functional malfunctions ☐
- Other (specify) ☐

Analyzes test or inspection findings to determine rejection cause ☐

Prepares rework order for rejected:

- Fabricated materials ☐
- Machined parts ☐
- Assemblies or units of systems ☐
- Structural assemblies ☐
- System installations ☐
- Product structure ☐
- Other (specify) ☐

Prepares acceptance reports for:

- Materials meeting specified physical characteristics ☐
- Vendor supplied parts meeting specifications ☐

Assembled units or subassemblies meeting

- functional specifications ☐
- Installed system that meets operational standards ☐
- Finished products meeting operating performance standards ☐
- Other (specify) ☐

Calibrates system instrumentation and control readings with standards approved by American Society for Testing and Measurement ☐

Resets controls, set screws, or devices on assemblies to obtain specified functional performance ☐

Disassembles system units or assemblies to locate cause of malfunction or defective part ☐

Resets clearances or frees moving parts that are binding ☐

Removes malfunctioning part of assembly or instrument ☐

Replaces part and reassembles unit or instrument ☐

Tests unit or assembly for functional performance ☐

Installs unit, assembly, or instrument in system and retests system ☐

Removes defective structural parts from structural or structural assembly ☐

Replaces structural material or fabricates part, using tooling or piece removed as template ☐

Positions and secures part in place with rivets or by welds ☐

Other (specify) ☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

- Management ☐
- Government Personnel ☐
- Engineering Personnel ☐
- Liaison Personnel ☐
- Laboratory Personnel ☐
- Inspection Personnel ☐
- Department Heads ☐
- Supervisors ☐

- Other Supervisors ☐
- Testing Personnel ☐
- Workers ☐
- Helpers ☐
- Apprentices ☐
- Military Personnel ☐
- Other (specify) ☐

EDUCATION AND TRAINING

Record an "X" to indicate education and training required.

- Elementary ☐
- High School ☐
- Junior College ☐

- Technical School ☐
- Vocational School ☐
- Apprenticeship (see listing) ☐

EDUCATION AND TRAINING—Continued

Military Training ☐ Other (specify) ☐
 On-the-job Training ☐

LICENSURE, CERTIFICATE, ETC.

Record an "X" to indicate license requirements.

FAA:
 Airframe and Power Plant Certificate ☐
 Airframe Certificate ☐
 Power Plant Certificate ☐
 FCC:
 Radiotelephone and Telegraph First
 Class License ☐
 Radiotelephone, First Class License ☐
 Radiotelephone, Second Class
 License ☐
 Other (specify) ☐

APPRENTICESHIP

Record an "X" to indicate apprenticeship.

Airframe and Powerplant Mechanic ☐
 Airframe Mechanic ☐
 Power Plant Mechanic ☐
 Flight Line Mechanic ☐
 Aircraft Electrician ☐
 Aircraft Electronic Technician ☐
 E/E Development Mechanic ☐
 Jig and Fixture Builder ☐
 Makeup/Tooling Development Mechanic ☐
 Maintenance Electronic Technician ☐
 Other (specify) ☐

SUBJECTS AND COURSES

Record an "X" to indicate subjects and courses that develop skills for occupation.

Craft Related Subjects and Courses:		Strength of Materials ☐
Practical Arithmetic ☐		Adhesives Bonding and Composites ☐
Shop Mathematics ☐		Metal Bonding ☐
Plane Geometry ☐		Laminating Processes ☐
Machine Tool Mathematics ☐		Systems Familiarization ☐
Basic Algebra ☐		Care and Use of Measuring Instruments ☐
Basic Trigonometry ☐		Care and Use of Tools ☐
Analytic Geometry ☐		Basic Electrical and Electronic Fundamentals: ☐
Shop Trigonometry ☐		Structure of Matter and Static Electricity ☐
Introductory Calculus ☐		Ohm's Law ☐
Mechanical Drawing ☐		Magnetism and Electrical Energy ☐
Technical Drawing ☐		Electro-magnetism and Relays ☐
Elements of Blueprint Reading ☐		Induction and Transformers ☐
Blueprint Reading ☐		Capacitance ☐
Applied Science ☐		Capacitive Reactance ☐
Applied Chemistry ☐		Inductance and Inductive Reactance ☐
Applied Physics ☐		Resonant Circuits ☐
Principles of Hydraulics ☐		Light Energy ☐
Principles of Pneumatics ☐		Sound Energy ☐
Mechanical Principles ☐		Oscillators ☐
Principles of Tool Design and Engineering ☐		Basic Transistors ☐
Heat Energy and Machines ☐		
Materials and Processes ☐		
Heat Treating ☐		

SUBJECTS AND COURSES—Continued

Vacuum Tubes	☐
Basic Communications Fundamentals:	
Evolution of Communications	☐
Electronic Regulated Power Supplies	☐
Electromechanic Plate Supplies	☐
Audio Amplifiers Theory and	
Testing	☐
Audio Applications	☐
Transmitter Theory and Oscillators	☐
Buffers and Frequency Multipliers	☐
Power Amplifiers	☐
Modulation Methods	☐
Amplitude Modulators	☐
Practical Transmitter Theory	☐
Antenna Fundamentals	☐
Receiver Testing	☐
Receiver Testing and Servicing	☐
Basic Navigation Fundamentals:	
Introduction to Navigational Aids	☐
Radio Range, Markers, ILS	☐
Special Modulators and Detectors	☐
Pulse Modulation, Reception,	
Counting	☐
Filters and Phase Shifters	☐
Integrators and Differentiators	☐
Position Data Transmission	☐
Control Transformers, Differentials,	
Resolvers	☐
ADF Receivers, Loop and	
Sense Theory	☐
Thyratron Control Systems	☐
Loran	☐
Electronic Altimeters	☐
Omni Range Receivers	☐
Automatic Control Systems Fundamentals:	
Introduction to Automatic Control	
Systems	☐
Actuators	☐
Sensing, Transducing, Data	
Transmitting	☐
Control Circuits	☐
Stabilization	☐
Radar System Fundamentals:	
Introduction to Radar	☐
Radar Component Functions	☐
Special Circuits	☐
Power Supplies and Protection	
Devices	☐
High Power Hi-Frequency	
Modulators	☐
Magnetrons and Antennae	☐
Klystrons and AFC	☐
Receiver Special Circuits	☐
Special Video Circuits	☐
Display Stabilization	☐

Antenna Stabilization	☐
Radar Test Equipment	☐
Functionally Testing Radar	☐
Computer Basic Fundamentals:	
Binary Number System	☐
Binary Arithmetic	☐
Logic Design Techniques	☐
Boolean Algebra	☐
Computer Concepts:	
Digital	☐
Analog	☐
Scale Factors, Constants,	
Calibration	☐
Computer Calibration and Testing	☐
Basic Computing Elements:	
Division-Multiplication	☐
Addition-Division-Trigonometry	☐
Functions-Integration-	
Differentiation	☐
Rating Gyros	☐
Accelerometers	☐
Transducers	☐
Function Generators	☐
Ball-disc Integrators	☐
Basic Computing Circuits:	
Amplifiers	☐
Summing-Integrating	☐
Feedback-Choppers-	
Multiplication by Variables	☐
Simple Computers:	
Every Application	☐
Electronic Applications	☐
Advanced Computers:	
Distance	☐
Rate	☐
Time	☐
Navigation	☐
Fire Control	☐
Other (specify)	☐
Printed Circuit Boards and Manufacture:	
Introduction	☐
Design	☐
Documentation	☐
Tooling and Machining	☐
Plating and Etching	☐
Fabrication of Plated Through	
Holes	☐
Fabrication of Multilayer Boards	☐
Fabrication of Flat Conductors	☐
Component Installation	☐
Quality Assurance	☐
Other (specify)	☐

SUBJECTS AND COURSES—Continued

Basic Optical Tooling:

Function of Optical Tooling	☐
Fundamental Optics	☐
Levels	☐
Transits	☐
Telescopes	☐
Laser and Hydraulic Positioner	☐
Tool Fabrication and Routine Procedure	☐
Other (specify)	☐

Electrical-Electronic Measurement:

Basics	☐
Introduction	☐
Thevenins Theory	☐
Thevenins to Wheatstone Bridge	☐
Wheatstone Bridge	☐
Characteristics of Standard Resistors	☐
Kelvin Bridge	☐
Megohm Bridge	☐
Characteristics of Standard Cells	☐
Loop Analysis	☐
Nodal Analysis	☐
Y Transformation	☐
Algebra and Determinants	☐
DC/AC Transfer Standards	☐
AC/DC Calibration and Transfer Standard	☐
AC Concept	☐
AC Thevenin Theory	☐
Calibration of Precision AC Voltmeters with AC Voltage Standard	☐
Error Analysis	☐
Schering Bridge	☐
Capacitance Measurements	☐
Bridge Problems	☐
AC Components	☐
Theory and Techniques of Phase Measurements	☐
Other (specify)	☐

Electromechanical Packaging Basics:

Introduction and Specifications	☐
Electrical Packaging Constraints	☐
Electrical Design and Development	☐
Fabrication	☐
Production Units	☐
Laboratory Testing	☐
Integration and Electromechanical Instrumentation	☐
Environmental Testing	☐
Other (specify)	☐

Antenna and Microwave Theory

and Measurements:	
Algebraic Equations	☐
Simultaneous Equations and Exponents and Radicals	☐
Powers of Ten and Logarithms	☐
Trigonometric Functions and Solutions of Triangles	☐
Vectors and Imaginary Numbers and Vectors and Vector Algebra	☐
Basic Laws of Current Flow Plus Coulomb and Electrostatics	☐
Faraday and Electrodynamics Plus Permanent and Electromagnets	☐
Induction Transformers and Motors Plus Capacity and Capacitive Reactance	☐
Inductance and Inductive Reactance Plus Admittance, Susceptance and Conductance	☐
Characteristics of Resonate Circuits Plus Power-Energy into Loads	☐
Transmission Lines	☐
Impedance and Admittance Applications	☐
Frequency	☐
Maintenance, Care and Use of Sensitive Measuring Devices	☐
Variable Standing Wave Ratio	☐
Attenuation	☐
Power	☐
Special Antenna Measurements	☐
Trouble Shooting Fundamentals	☐
Associated Equipment and Equipment Use and Theory	☐
Other (specify)	☐

Template Layout Basics:

Flat Pattern Layout	☐
Form Block Template Layout	☐
Sample Part Layout	☐
Design, Apply, Trim, and Drill Template	☐
Flat and Form Block Template Layout	☐
Use of Project Tool Manual	☐
Use of Information from Tool Order	☐
Right Angle Trigonometry	☐
Flat Steel Protractor Layout	☐
Height Gage Layout	☐
Height Gage Inspection	☐
Safety Practices	☐
Other (specify)	☐

SUBJECTS AND COURSES—Continued

Airframe and Power Plant Mechanic:

Airframe Mechanic:

- Fundamentals of Aircraft Construction ☐
- Airframe ☐
- Rigging ☐
- Welding ☐
- Sheetmetal Work ☐
- Weight and Balance ☐
- Paint and Dope ☐
- Metal Fittings ☐
- Fasteners ☐

Power Plant Mechanic:

- Fundamental Theory of Airplane
 - Engines ☐
- Reciprocating Engines ☐
- Jet Engines ☐
- Assembly and Dismantling of
 - Engine ☐
- Engine Accessories ☐
- Engine Instruments ☐
- Carburetion ☐
- Fuel Metering and Injection ☐
- Superchargers ☐
- Flight Control Systems ☐
- Hydraulics and Plumbing Systems ☐
- Pneumatic Systems ☐
- Life Support Systems ☐
- Pressurization Systems ☐
- Fundamental Training for FAA:
 - A and P Certificate ☐
 - Airframe Certificate ☐
 - Power Plant Certificate ☐
- Trouble Shooting ☐
- Other (specify) ☐

Aircraft Electrical Mechanic:

Fundamentals of Aircraft:

- Electrical Systems ☐
- Aircraft Electrical Installation ☐

Aircraft Power Systems:

- Primary Power DC Systems ☐
- Auxiliary DC Systems ☐
- Primary Power AC Systems ☐
- Auxiliary AC Systems ☐

Circuit Design

Aircraft Circuits

Complex Circuits

Power Distribution Circuit Design:

- Single Generator Systems ☐
- Multi Generator Systems ☐

Autopilot and Flight Path Control

The Autopilot

Special Problems and Designs:

- Anti-icing ☐
- De-icing ☐

Temperature Control ☐

Air Conditioning ☐

Propeller Control ☐

Gyro Compass Systems ☐

Other (specify) ☐

Aircraft Electronic Technician:

Tool Crib ☐

Electrical Fabrication and Assembly ☐

Final Testing Electrical and Hydraulic

Systems ☐

Aircraft Assembly and Systems Checkout ☐

Electrical and Electronic Equipment

Development ☐

Test Equipment Construction and

Calibration ☐

Final Testing Electronics System ☐

Electrical Systems Development ☐

Electrical Systems Inspection ☐

Other (specify) ☐

Electrical-Electronics Development Mechanic:

Mechanic ☐

Tool Crib ☐

Electrical Fabrication and Assembly ☐

Sheetmetal Subassembly ☐

Electrical-Electronic Installation

and Checkout ☐

Final Testing:

Pneumatic System ☐

Electrical System ☐

Electronic System ☐

Test Equipment-Construction and

Calibration ☐

Electrical-Electronic Systems

Development ☐

Electrical-Electronic Systems

Inspection ☐

Instrumentation-Flight Test ☐

Other (specify) ☐

Flight Line Mechanic:

Processing Parts ☐

Sheet Metal Fabrication and Assembly ☐

Aircraft Assembly ☐

Functional Test and Inspection ☐

Production Flight ☐

Flight Test ☐

Other (specify) ☐

Jig and Fixture Builder:

Jigs and Fixtures ☐

Structures Assembly ☐

Machine Tools and Equipment ☐

Templates and Lofting ☐

SUBJECTS AND COURSES—Continued

Plaster and Plastics	☐	Capacitance and Capacitive Circuits	☐
Tool Design and Inspection	☐	Basic A/C Circuit Analysis	☐
Heat Treating and Welding	☐	Diodes and Power Supplies	☐
Other (specify)	☐	Vacuum Tubes	☐
Mockup/Tooling Development Mechanic:		Transistors	☐
Sheetmetal Fabrication	☐	Amplifiers, General	☐
Structural Assembly	☐	Amplifier Comprehensive Testing	☐
Template Making	☐	RF Amplifiers and Resonance	☐
Plaster/Plastics Tooling	☐	Oscillators	☐
Tool Design and Inspection	☐	Heterodyne and Neutralization	☐
Cabin Furnishings	☐	Modulation and Detection	☐
Fabrication and Structure Development	☐	Transmitters	☐
Wood Patternmaking	☐	Receivers	☐
Other (specify)	☐	Antennas-Propagation	☐
FCC Radiotelephone and Telegraph:		Antenna Testing	☐
License Review and Familiarization	☐	Coupling and Frequency Measurement	☐
Purpose and Scope of Course	☐	Frequency Modulation	☐
Batteries and Motors	☐	Basic Radar	☐
Inductance and Inductive Circuits	☐	Magnetrons and Klystrons	☐
		Communication Laws	☐
		Other (specify)	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines:

Type of machine:

Automatic	☐
Console controlled	☐
Multi-purpose	☐
Multi-acting	☐
Multi-spindle	☐
Numerical controlled	☐
Single acting	☐
Single spindle	☐
Radial	☐
Rotary	☐
Rotary head	☐
Tape controlled	☐
Other (specify)	☐
Bending machine	☐
Brake	☐
Cold roll mill	☐
Contour roll machine	☐
Cutoff machine	☐
Draw roll machine	☐
Drill press	☐
Drivematic machine	☐
Drop hammer	☐
Duplicating and profiling machine	☐
Forming roll machine	☐
Flaring machine	☐
Hot dimpling machine	☐

Lathes:

Buffing lathes	☐
Grinding lathes	☐
Polishing lathe	☐
Spinning lathe	☐
Metallizing machine	☐
Numbering machine	☐
Pantograph machine	☐
Power hammer	☐
Planishing machine	☐
Presses:	
Arbor press	☐
Hydraulic press	☐
Straightening press	☐
Progressive rolling machine	☐
Riveting machine	☐
Router	☐
Saws:	
Hacksaw	☐
Circular saw	☐
Bend saw	☐
Cutoff saw	☐
Abrasive saw	☐
Do-all saw	☐
Shaper	☐
Shears:	
Nibbler	☐
Squaring shear	☐
Wiping machine	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Grinders:

- Pedestal grinder ☐
- Tool and cutter grinder ☐
- Stretch wrap forming machine ☐
- Silkscreen machine ☐

Presses:

- Punch press ☐
- Stretch press ☐
- Swaging machine ☐
- Tumbling barrel abrasive machine ☐
- Proof loading machine ☐
- Belt sanding machines ☐
- Woodworking machines ☐
- Pattern making machines ☐
- Impact extrusion press ☐
- Other (specify) ☐

Tools:

Handtools:

- Pliers ☐
- Screwdrivers ☐
- Hammers ☐
- Mauls ☐
- Mallets ☐

Wrenches:

- Box ☐
- Open end ☐
- Torque ☐
- Monkey ☐

- Pipe cutters ☐
- Pipe benders ☐
- Pipe threaders ☐
- Files ☐
- Tube benders ☐
- Tube flares ☐
- Tube cutters ☐
- Other (Specify) ☐

Equipment:

- Anodizing equipment ☐
- Chemical etching ☐
- Electrolytic cleaning equipment ☐
- Electroplating equipment ☐
- Heat treating equipment ☐
- High energy forming equipment ☐
- Induction brazing equipment ☐
- Photo etching equipment ☐
- Plastics laminating equipment ☐
- Profiling cutting torch equipment ☐
- Oxygraph cutting equipment ☐
- Sandblasting equipment ☐
- Gas generated atmospheric furnaces ☐
- Ovens ☐
- Welders: ☐
- Flash ☐

- Spot ☐
- Roll ☐
- Seam ☐
- Other (specify) ☐

Work Aids:

Measuring devices:

- Balance gage ☐

Calipers:

- Inside ☐
- Outside ☐
- Vernier ☐

Dividers:

- ☐

Gages:

- Center gage ☐
- Dial indicator ☐
- Feeler gage ☐
- Fixed gage ☐
- Height gage ☐
- Plug gage ☐
- Screwpitch gage ☐
- Surface plate ☐
- Telescoping gage ☐
- Thickness gage ☐
- Thread gage ☐

Gage blocks:

- Johannsen blocks ☐
- Parallel blocks ☐
- V-blocks ☐

Micrometers:

- Depth micrometer ☐
- Flange micrometer ☐
- Inside micrometer ☐
- Outside micrometer ☐
- Swiss hole micrometer ☐
- Tube micrometer ☐
- Electronic micrometer ☐

- Angle plates ☐
- Quadrants ☐
- Straight edges ☐
- Depth rules ☐
- Shrink rules ☐
- Optical comparator ☐
- Other (specify) ☐

Testing equipment:

- Wattmeter ☐
- Potentiometer ☐
- Manometer ☐
- Tachometer ☐
- Focometer ☐
- Galvanometer ☐
- Collimator ☐
- Dynanometer ☐
- Extensometer ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Tensiometer	☐	Burst testers	☐
Torque meter	☐	Bend fatigue machine	☐
Conductometer	☐	Magnaflux test equipment	☐
Frequency meter	☐	Ultra sonic test equipment	☐
Megohmmeter	☐	Fluorescent penetrant test equipment	☐
Ammeter	☐	Approval slips	☐
Power factor meter	☐	Acceptance slips	☐
Phase angle meter	☐	Rejection slips	☐
Voltmeter	☐	Engineering drawings	☐
Voltohm milliammeter	☐	Inspection orders	☐
Photometer	☐	Records	☐
Electrophotometer	☐	Graphs	☐
Light Meter	☐	Tables	☐
Spectrophotometer	☐	Specimens	☐
Plastometer	☐	Specifications	☐
Durometer	☐	Test sheets	☐
Densitometer	☐	Checkout lists	☐
Thermometer	☐	Design change sheets	☐
Color machography equipment	☐	Tooling specifications	☐
Flight simulators	☐	Fabricating specifications	☐
Circuit continuity equipment	☐	Bench assembly specifications	☐
Megohm bridge	☐	Schedules	☐
Wheatstone bridge	☐	Structural assembly specifications	☐
Impedance measuring equipment	☐	System installation specifications	☐
Oscillographs	☐	Skeiches	☐
Oscilloscopes	☐	Plumb bob	☐
Metalograph	☐	Microscope	☐
Transit	☐	Master patterns	☐
Optical protractor	☐	Master templates	☐
Binocular microscope	☐	Holding devices	☐
Optical centering instrument	☐	Jigs	☐
Stress strain recorders	☐	Fixtures	☐
Pneumatic test equipment	☐	Patterns	☐
Hydrostatic test equipment	☐	Other (specify)	☐
Hardness testers	☐		

AERO-ASTRO PRODUCTS AND SYSTEMS

Record an "X" to indicate product, structure, or system worked on.

Aerospace products:

Space vehicles:

Space craft:

- Manned spacecraft
- Unmanned spacecraft
- Modules

Missiles:

- Surface to air
- Surface to surface
- Air to surface
- Intercontinental
- Booster vehicles
- Launch vehicles
- Test stands

Space simulators

- Environmental simulators
- Other (specify)

Aircraft:

Helicopters:

- STOL
- VTOL

Hypersonic aircraft

Military aircraft:

- Strategic aircraft
- Tactical aircraft
- Support aircraft
- Training aircraft
- Supersonic aircraft

AERO-ASTRO PRODUCTS AND SYSTEMS—Continued

Transport aircraft:		Launch vehicle structures	☐
Cargo aircraft	☐	Missile structures	☐
Commercial aircraft	☐	Re-entry structures	☐
Private aircraft	☐	Other (specify)	☐
Other (specify)	☐		
Aircraft training products:		Miscellaneous structures	☐
Aircraft simulators	☐	Wind tunnels	☐
Operational simulators	☐	Craft systems:	
Training simulators	☐	Propulsion systems:	
Link trainers	☐	Turbo jet	☐
Other (specify)	☐	Ram jet	☐
		Piston driven	☐
		Rocket driven	☐
		Fan jet	☐
		Other (specify)	☐
Aircraft structures:		Flight control systems	☐
Airframe	☐	Hydraulics and plumbing systems	☐
Wings	☐	Navigational systems	☐
Tailsections	☐	Communication systems	☐
Fuselages	☐	Electrical-electronic systems	☐
Arresting gear	☐	Instrument systems	☐
Landing gear	☐	Life-support systems	☐
Bomb bays	☐	Pneumatic systems	☐
Aircraft compartmentation	☐	Armament systems	☐
Other (specify)	☐	Inertial guidance systems	☐
		Other (specify)	☐
Spacecraft structures:			
Capsules	☐		
Nose cones	☐		
Booster vehicle structures	☐		

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial:		Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

BUILDING AND CONSTRUCTION TRADES

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Supervises, and coordinates activities of, workers engaged in building and construction craft activities as:

Carpentry	☐
Plastering	☐
Waterproofing	☐
Concrete masonry	☐
Bricklaying	☐
Stone setting	☐
Tile setting	☐
Pipefitting	☐
Structural steel erection	☐
Plumbing	☐
Asbestos and insulation work	☐
Paperhanging	☐
Lathing	☐
Pipelaying	☐
Concrete and asphalt paving	☐
Flooring	☐
Glazery	☐
Roofing	☐
Rigging	☐
Elevator constructing	☐
Tank building and erecting	☐
Marble setting	☐
Monument setting	☐
House moving	☐
Ornamental and architectural iron erection	☐
Mining	☐
Drywall applying	☐
Insulating work	☐
Other (specify)	☐

Operating equipment as:

Grading equipment	☐
Excavating equipment	☐
Concrete paving equipment	☐
Asphalt paving equipment	☐
Dredging equipment	☐
Pile driving equipment	☐
Well drilling equipment	☐
Tunneling equipment	☐
Other (specify)	☐

WHAT THE WORKER DOES—Continued

Materials:

- Handling equipment ☐
- Transporting equipment ☐
- Mixing equipment ☐
- Pumping equipment ☐
- Other (specify) ☐

- Bore tunnels ☐
- Handle materials ☐
- Transport materials ☐
- Mix materials ☐
- Pump materials ☐
- Other (specify) ☐

- Tending ☐
- Concrete or plaster:
 - Batching equipment ☐
 - Pumping equipment ☐
 - Spraying equipment ☐
 - Other (specify) ☐

- Moves levers, turns controls, or depresses pedals to:
 - Start or stop equipment ☐
 - Guide or steer equipment ☐
 - Position attachments for specific operations ☐
 - Perform operations ☐
 - Reposition attachments or equipment ☐
 - Other (specify) ☐

Plans and determines:

- Manpower requirements ☐
- Worker schedules ☐
- Construction procedures ☐
- Maintenance procedures ☐
- Inspection requirements ☐

- Prepares work schedules ☐
- Assigns workers to duties ☐
- Gives work directions to workers ☐

- Interprets building plans, structural specifications, drawings, and technical data ☐

- Trains workers in:
 - Craft duties ☐
 - Operation of machines and equipment ☐
 - Safety practices and regulations ☐

- Advises workers in methods and procedures for solving work problems ☐

- Coordinates:
 - Craft activities with other craft activities ☐
 - Worker activities ☐
 - Building inspection activities ☐

- Enforces worker compliance with established work procedures, regulations, and safety rules ☐

- Recommends promotions, demotions, discharges, and disciplinary actions ☐

- Evaluates workers performance ☐

- Requisitions materials, tools, and equipment ☐

- Requisitions machine maintenance and repair ☐

- Keeps records of workers performance ☐

- Prepares reports on construction or maintenance activities ☐

- Other (specify) ☐

Operates equipment to:

- Grade construction sites ☐
- Excavate earth and other materials ☐
- Pave highways and streets ☐
- Dredge sand and other materials ☐
- Drive pilings ☐
- Drill wells ☐

Tends equipment or machines to:

- Mix batches of concrete, plaster, or other covering materials ☐
- Pump concrete, plaster, or other materials ☐
- Spray materials on structure ☐
- Maintain pressure in underground structures or chambers (locks) ☐
- Other (specify) ☐

Constructs, erects, or builds:

- Wooden structures and fixtures ☐
- Structural steel framework ☐
- Tanks ☐
- Concrete forms and pouring chutes ☐
- Scaffolding ☐
- Fences ☐
- Metal framework ☐
- Stairways ☐
- Elevators or moving airways ☐
- Other (specify) ☐

Sets:

- Marble slabs or blocks ☐
- Stone ☐
- Tile ☐
- Artificial stone ☐
- Monuments ☐
- Other (specify) ☐

Fits and installs:

- Steam, gas, water, or acid piping systems ☐
- Plumbing systems and fixtures ☐
- Pneumatic tube conveyor systems ☐
- Pneumatic control system piping ☐
- Cabinets ☐
- Window frames ☐
- Partitions ☐
- Doors ☐
- Door frames ☐

WHAT THE WORKER DOES—Continued

Weather stripping	☐	Architects drawings	☐
Wooden trim	☐	Bills of materials	☐
Metal hardware	☐	Work order specifications	☐
Structural steel	☐	Structural specifications	☐
Structural glass	☐	Construction plans	☐
Other (specify)	☐	Contract specifications	☐
		Other (specify)	☐
Lays:		Determines:	
Brick structural tile and block materials	☐	Building sequences	☐
Terrazzo floors	☐	Construction sequences	☐
Flooring and subflooring	☐	Installation sequences	☐
Floor coverings and foundation materials	☐	Methods and procedures for specified work	☐
Pipe for storm drains, sewers, and		Other (specify)	☐
water mains	☐		
Other (specify)	☐	Calculates:	
		Material requirements	☐
Applies:		Equipment requirements	☐
Composition weatherboard on exterior surfaces	☐	Job cost	☐
Siding materials on exterior surfaces	☐	Building angles and courses	☐
Decorative and protective paint on		Other (specify)	☐
building surfaces	☐		
Stucco on exterior surfaces	☐	Measures:	
Plasterboard onto walls and ceilings	☐	Structural areas	☐
Waterproofing material on exterior		Dimensions of structure	☐
surfaces	☐	Material length, width, or thickness	☐
Calking compounds in cracks and crevices	☐	Other (specify)	☐
Coats of plaster on interior surfaces	☐		
Sizing compound on work surfaces	☐	Selects specified materials:	
Roofing materials on structures	☐	Lays out:	
Insulating materials on equipment and		Reference points and lines	☐
pipings systems	☐	Material cutting lines	☐
Other (specify)	☐	Assembly lines	☐
		Work guidelines	☐
Fastens:		Foundation lines	☐
Lathing materials on walls and ceilings	☐	Grading lines	☐
Acoustical tile on ceilings	☐	Fence lines	☐
Facing brick on sides of structures	☐	Other (specify)	☐
Insulation materials onto walls, floors,			
and ceilings	☐	Prepares surfaces or areas for work by:	
Paneling on walls	☐	Sanding	☐
Other (specify)	☐	Cleaning	☐
		Chipping	☐
Blows insulating materials into spaces		Scraping	☐
of structures	☐	Filling holes, cracks, crevices,	
Finishes:		or joints	☐
Wooden floors	☐	Scaling	☐
Concrete surfaces	☐	Sealing	☐
Plaster surfaces	☐	Removing fixtures or obstacles	☐
Stucco surfaces	☐	Masking or covering non-work areas	☐
Other (specify)	☐	Removing rough or defective surfaces	☐
		Other (specify)	☐
Reviews, studies, or analyzes:		Cuts material into specified:	
Blueprints	☐	Shape	☐
Sketches	☐		
Building plans	☐		

WHAT THE WORKER DOES—Continued

Size	☐	Verifies alignment of:	
Length	☐	Parts	☐
Width	☐	Structures	☐
Thickness	☐	Stone	☐
Other (specify)	☐	Brick	☐
		Installation	☐
		Other (specify)	☐
Spreads:			
Concrete to specified depth	☐	Breaks or cuts off excess material	☐
Mortar on brick, structural tile, blocks and other materials	☐	Drills hole for:	
Stucco onto exterior surfaces	☐	Attaching material on structures	☐
Plaster onto walls or over lathing	☐	Installing material	☐
Mastic or other adhesive on floor or foundation coating	☐	Fills joints with:	
Paste on wallpaper	☐	Calking materials	☐
Putty on sash of windows	☐	Lead	☐
Other (specify)	☐	Calking compound	☐
		Sealing compound	☐
		Mortar	☐
		Other (specify)	☐
Joins, secures, or fastens material by:			
Nails	☐	Cuts and bends:	
Metal straps	☐	Pipe into specified size and shape	☐
Staples	☐	Lathing to fit openings, corners, and projections	☐
Dowels	☐	Threads pipe	☐
Threaded joints	☐	Digs foundation trenches	☐
Calked joints	☐	Pours concrete foundations	☐
Rivets	☐	Mounts hangers and brackets	☐
Soldered joints	☐	Replaces defective piping	☐
Brazing	☐	Brushes, sprays, or rolls paint on surfaces	☐
Welding	☐	Cleans equipment and tools	☐
Wire	☐	Matches design and pastes paper on wall	☐
Hangers	☐	Polishes stone or marble	☐
Brackets	☐	Positions glass in window sashes	☐
Screws	☐	Assembles glass doors and windows in metal frames	☐
Bolts	☐	Smooths wallpaper on wall	☐
Anchor bolts	☐	Inspects piping system for defects	☐
Cement	☐	Tests piping systems for leaks	☐
Adhesive	☐	Paints and insulates pipes and fittings	☐
Mastic	☐	Molds concrete expansion joints	☐
Glazier points	☐	Repairs defects in material	☐
Mortar	☐	Presses brick or tile into mortar	☐
Pins	☐	Nails or cements waterproof materials on roof	☐
Glue	☐	Digs postholes and sets posts	☐
Clips	☐	Stretches wire and attaches it onto posts	☐
Tie rods	☐	Replaces leaky faucet washers	☐
Braces	☐	Opens clogged drains	☐
Putty	☐	Attaches molding around windows, doors, and other openings	☐
Other (specify)	☐	Directs workers to mix plaster or other materials	☐
Mixes by hand or machine:			
Paint pigments, vehicle, and coloring	☐		
Wallpaper paste	☐		
Sealing compounds	☐		
Mortar	☐		
Other (specify)	☐		

WHAT THE WORKER DOES—Continued

Wires lathing strips on furring	☐	Stacks materials adjacent to worker	☐
Wires lathing channels onto overhead structural framework	☐	Cleans finished structures	☐
Presses sealing tape over compound and joints in drywall	☐	Signals operating personnel actions to be taken	☐
Fills hopper of mixing machine with materials	☐	Attaches slings onto materials for hoisting operations	☐
Turns valves to regulate pumps and air compressor	☐	Guides materials into position	☐
Guides nozzle of caulking gun along crevices in structure	☐	Positions beams for supporting structure	☐
Presses lever to discharge compound into crevice	☐	Jacks house up and places dollies under beams	☐
Carries materials to craftsmen	☐	Attaches towing bar onto dollies	☐
		Other (specify)	☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Building Contractor	☐	Workers	☐
Trade Contractor	☐	Helpers	☐
Construction Superintendent	☐	Apprentices	☐
Supervisors	☐	Other (specify)	☐
Supervisors of Other Trades	☐		

EDUCATION AND TRAINING

Record an "X" to indicate education or training required.

Elementary	☐	Technical Training	☐
Junior High School	☐	On-the-job Training	☐
High School	☐	Apprenticeship Training (see apprentice listing)	☐
Junior College	☐	Other (specify)	☐
Vocational School	☐		

LICENSURE OR CERTIFICATION

Record an "X" to indicate licenses or certification required.

Federal	☐	City	☐
State	☐	Other (specify)	☐
County	☐		

BUILDING TRADES AND CONSTRUCTION APPRENTICESHIPS

Record an "X" to indicate type of apprenticeship training.

Asbestos and Insulation Worker	☐	Iron Worker:	
Bricklayer	☐	Ornamental Iron Worker	☐
Carpenter	☐	Reinforcing Iron Worker	☐
Cement Mason	☐	Structural Steel Worker	☐
Elevator Constructor	☐	Lather	☐
Floor Layer	☐	Marble Mason	☐
Glazier	☐	Painter and Decorator	☐

BUILDING TRADES AND CONSTRUCTION APPRENTICESHIPS—Continued

Paperhanger	☐	Terrazzo Worker	☐
Pipefitter	☐	Tile Setter	☐
Plasterer	☐	Operating Engineer:	
Plumber	☐	Construction Equipment Operator	☐
Roofer	☐	Dredge Operator	☐
Sprinkler Fitter	☐	Pile Driver	☐
Steamfitter	☐	Hoisting and Portable Equipment Operator	☐
Stone Mason	☐	Other (specify)	☐

SUBJECTS AND COURSES

Record an "X" to indicate subjects or courses that develop skills for the occupation.

Trade Related Subjects and Courses:

Applied Science	☐
Applied Chemistry	☐
Applied Physics	☐
Architectural Drawing	☐
Blueprint Reading	☐
Building Regulations and Codes	☐
Electrical Theory	☐
Electronic Theory	☐
Interpretation of Drawings	☐
Estimating	☐
Foremanship and Supervision	☐
Human Behavior	☐
Inspection	☐
Practical Geometry	☐
Practical Trigonometry	☐
Safety Practices	☐
Safety Regulations	☐
Sketching	☐
Trade Mathematics	☐
Trade Science	☐
Welding	☐
Other (specify)	☐

Trade Theory:

Asbestos and Insulation Worker:

Insulating Materials	☐
Pipe Coverings	☐
Insulating:	
Steam Piping	☐
Ventilation Systems	☐
Machinery and Equipment	☐
Refrigeration Equipment	☐
Refrigeration Piping	☐
Air Conditioning Piping	☐
Methods of Application	☐
Tools and Their Uses	☐
Insulation Covering Materials	☐
Methods of Covering Insulation	☐
Other (specify)	☐

Bricklayer:

History of Masonry	☐
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Masonry Materials	☐
Application of Masonry Materials	☐
Tool Terminology	☐
Tool Description, Purposes, and Uses	☐
Functional Principles of Masonry	
Tools	☐
Types of Bonding Materials	☐
Types and Uses of Reinforcing	
Materials	☐
Safe Use of Tools, Scaffolding, and	
Materials	☐
Mixing and Application of Mortars	☐
Laying of:	
Cement Blocks	☐
Common Brick	☐
Architectural Terra Cotta	☐
Facing Brick	☐
Refractory Brick	☐
Construction of:	
Walls	☐
Corners	☐
Angles and Courses	☐
Pilasters	☐
Piers	☐
Footings	☐
Columns	☐
Chimneys	☐
Smokestacks	☐
Fireplaces	☐
Hearths	☐
Reinforced Masonry	☐
Cleaning and Preparing Surfaces	☐
Pointing	☐
Chalking and Grouting	☐
Other (specify)	☐

Carpenter:

History and Orientation	☐
Introduction to Handtools and	
Materials	☐
Handtool Skills	☐
Principles of Machine Tools	☐

SUBJECTS AND COURSES—Continued

Machine Tools Operation	☐
Forms, Foundations, and Concrete	☐
Principles of Construction	☐
Framing Construction	☐
Principles of Exterior Finish	☐
Application of Interior Finish	☐
Introduction to Stairbuilding	☐
Layout and Construction of Stairs	☐
Heavy Construction Principles	☐
Form Detailing and Construction	☐
Hardware and Installation	☐
Door Hanging	☐
Cabinet Work	☐
Other (specify)	☐

Cement Mason:

Masonry Materials	☐
Trade Tools and Equipment	☐
Forms and Form Construction	☐
Working Characteristics of Materials	☐
Concrete Working Techniques	☐
Concrete Finishing Techniques	☐
Expansion Joints	☐
Concrete Handwork	☐
Concrete Machine Work	☐
Other (specify)	☐

Elevator Constructor:

Materials and Equipment	☐
Controls	☐
Installation Procedures	☐
Installing: Guide Rails	☐
Hoisting Equipment and Motors	☐
Counterweights	☐
Control Systems	☐
Signaling Equipment	☐
Safety Devices	☐
Elevator Testing and Adjusting	☐
Elevator Maintenance and Repair	☐
Other (specify)	☐

Floor Layer:

Materials of Trade	☐
Types of Adhesives	☐
Surface Preparation	☐
Work Layout	☐
Material Cutting, Fitting, Molding	☐
Trade Tools and Equipment	☐
Tile Laying Techniques	☐
Linoleum Laying Techniques	☐
Other (specify)	☐

Glazier:

Trade History and Orientation	☐
Trade Tools and Equipment	☐
Materials	☐
Glass Specifications	☐
Types and Qualities of: Glass	☐
Metal	☐
Special Fastening Devices	☐
Job Site Layout Methods	☐
Methods of Cutting and Installing: Glass	☐
Mirrors	☐
Glass Doors and Partitions	☐
Manufacture and Preparation of: Insulated Glass Units	☐
Corrugated Glass Units	☐
Types and Application of Structural Glass	☐
Other (specify)	☐

Iron Worker:

History and Scope of Ironworking Trade	☐
Tools and Equipment	☐
Rope Knots and Hitches	☐
Care and Handling of Rope	☐
Handtools	☐
Cable Working Loads	☐
Hardware	☐
Cranes, Derricks, and Poles	☐
Principles of Ironworking Trade: Structural Principles	☐
Ornamental Principles	☐
Reinforced Iron Principles	☐
Materials of Trade: Rolled Steel Shapes	☐
Rolled Sheet Steel	☐
Corrugated Materials	☐
Fabricated Steel Shapes	☐
Ornamental Materials	☐
Fasteners	☐
Classes of Leverages	☐
Gears and Ratios	☐
Weights of Materials	☐
Care and Use of Transit	☐
Scaffolding and Ladders	☐
Structural Steel Erection	☐
Machinery, Moving and Rigging: Reeving of Rope	☐
Use and Care of Wire Rope	☐
Splicing of Fiber and Wire Rope	☐
Rigging Hardware and Attachments	☐
Hoisting Equipment	☐
Guy Lines and Anchorages	☐
Jacks, Rolls, and Skids	☐

SUBJECTS AND COURSES—Continued

Structural Steel Erection:

- Fabrication Procedures ☐
- Material Identification ☐
- Material Handling and Transporting ☐
- Connecting, Hooking-on, Taglining ☐
- Plumbing and Leveling ☐
- Mechanical Fasteners ☐
- Connections of Structural Steel ☐
- Structural Rigging ☐
- Parts and Erection Methods of:

- Towers ☐
- Buildings ☐
- Bridges ☐

- Structural Safety ☐
- Signalling Methods ☐

Reinforcing Ironwork:

- Identification of Materials ☐
- Hand and Bending Tools ☐
- Fabrication ☐
- Accessories ☐
- Unloading and Sorting of Materials ☐
- Types of Material Ties ☐
- Footings ☐
- Placing ☐
- Joint Preparation ☐
- Welding Procedures ☐

Ornamental Ironwork:

- Handtools ☐
- Drills and Taps ☐
- Doors and Elevator Fronts ☐
- Curtain Wall Construction ☐
- Sashes ☐
- Stairways ☐
- Handrails ☐
- Layout ☐
- Fasteners ☐

Sheeting and Fencing:

- Sheeting Materials ☐
- Sheeting Erection Methods ☐
- Service Station Materials ☐
- Service Station Erection Methods ☐
- Fencing Materials ☐
- Fencing Erection Methods ☐

Other (specify) ☐

Lather:

- Lathing Materials ☐
- Trade Tools and Equipment ☐
- Lathing Methods and Techniques ☐
- Specifications for Lathing ☐
- Lathing and Metal Layout ☐
- Structural Components ☐
- Lathing Accessories ☐
- Installation of:
- Lathing ☐

Lathing Accessories ☐

- Lathing:
- Partitions and Walls ☐
- Ceilings ☐
- Exterior Surfaces ☐
- Other (specify) ☐

Painter and Decorator:

- History and Background of Trade ☐
- Health and Safety Measures ☐
- Materials of Trade and Uses ☐
- Basic Uses of Trade Tools ☐
- Laws Governing Worker ☐
- Preparing Colors and Materials ☐
- Methods of Applying Materials ☐
- Hardwood and Hardwood Finishes ☐
- Architectural Decorating Practices and Finishes ☐
- Basic Graining and Marbling ☐
- Mixing and Matching Colors ☐
- Principles of Color Harmony ☐
- Color Chemistry ☐
- Psychology of Color ☐
- Care of Tools and Equipment ☐
- Other (specify) ☐

Paperhanger:

- Materials of Trade ☐
- Tools of Trade ☐
- Selection and Use of Tools ☐
- Preparation of Surfaces ☐
- Application of:
- Wallpaper ☐
- Canvas ☐
- Muslin ☐
- Fabrics ☐
- Systems of Color Notation ☐
- Principles of Color Harmony ☐
- Other (specify) ☐

Plasterer:

- History and Development of Trade ☐
- Chemistry of Plastering Materials ☐
- Proportions of Materials ☐
- Lath and Masonry Bases ☐
- Plastering Materials ☐
- Job Conditions Affecting Plastering ☐
- Plaster Cracks and Causes ☐
- Dotting, Pressed Seeds, and Water Leveling ☐
- Job Layout Problems ☐
- Acoustical Plastering ☐
- Effect of Weather on Plastering ☐
- Effect of Poor Construction and Application ☐

SUBJECTS AND COURSES—Continued

- Mitering Breaks and Returns ☐
- Geometrical Layout Problems ☐
- Molding and Casting ☐
- Application of Materials ☐
- Finishing Surfaces ☐
- Other (specify) ☐

Pipe and Steam Fitter:

- History and Development of Trade ☐
- Science of Heating and Refrigeration ☐
- Dimension Standards ☐
- Characteristics and Use of Piping ☐
- Mathematical Measurements ☐
- Steam Power ☐
- Process Piping, Theory and
Installation ☐
- Principles of Heating Systems ☐
- Operation of Heating Systems ☐
- Standards for Heating Equipment ☐
- Low Pressure Heating Systems ☐
- Air Conditioning ☐
- Plumbing Fixtures, Installation, Applications,
Testing, Servicing ☐
- Heating and Refrigeration Equipment,
Servicing and Maintenance ☐
- Layout and Installation of Air
Conditioning Piping System ☐
- Other (specify) ☐

Plumber:

- Plumbing Materials ☐
- Trade Tools and Uses ☐
- Principles and Practices of Water
Supply and Distribution ☐
- Formulas ☐
- Charts and Conversion Tables ☐
- Coefficients and Factors ☐
- Pipe Size Calculations ☐
- Structural Standards of Fixture
Design ☐
- Fixtures and Special Applications ☐
- Layout for Plumbing and Pipefitting ☐
- Composition, Manufacture, and General
Specifications for Pipe and Fittings ☐
- Bacteriological Considerations ☐
- Backflow Conditions and Prevention ☐
- System Design for Prevention of
Water Pollution ☐
- Conventional and Practical Layout
Methods ☐
- Piping Layout ☐
- Layout Methods ☐
- Fabrication and Erection of Piping ☐
- Installation and Testing of Plumbing
Fixtures and Appliances ☐

- Other (specify) ☐

Roofer:

- Materials of Trade ☐
- Use and Care of Tools and Equipment ☐
- Preparation of Work Surfaces ☐
- Installation Methods for Slate,
Tile, Terra Cotta, Paper ☐
- Application Methods for Tar, Pitch,
Asphalt, Gavel, and Paper ☐
- Principles of Waterproofing and
Dampproofing ☐
- Procedures of Waterproofing and
Dampproofing ☐
- Other (specify) ☐

Sprinkler Fitter:

- History of Trade ☐
- Classes of Systems ☐
- Elements of Design ☐
- Underground Piping ☐
- Sprinkler Heads ☐
- Valves ☐
- Dry System ☐
- Mechanical Alarms ☐
- Electric Alarms ☐
- Fire Department Connection Alarms ☐
- Supervisory Alarms ☐
- Special Sprinkler Systems ☐
- Thermostatically Controlled Systems ☐
- Details of Systems Installation and
Design ☐
- Rigging and Scaffolding ☐
- Elements of Costs ☐
- Job Planning ☐
- Other (specify) ☐

Stone Mason — Marble Mason:

- History of Masonry Trade ☐
- Application of Masonry Methods ☐
- Tool Terminology ☐
- Tool Descriptions, Purposes, Uses ☐
- Functional Principles of Masonry
Tools ☐
- Masonry Materials ☐
- Types of Bonding Materials ☐
- Types and Uses of Reinforcing and
Fastening Materials ☐
- Mixing and Application of Bonding
Materials ☐
- Layout of Work ☐
- Fitting and Setting of Material
on Walls, Floors, Stairs, and
Arches ☐
- Cleaning of Materials ☐

SUBJECTS AND COURSES—Continued

Pointing and Grouting	☐	Lubrication	☐
Preparation of Working Surfaces	☐	Introduction to Basic Electricity	☐
Other (specify)	☐	Introduction to Basic Hydraulics	☐
Tile Setter:		Converters	☐
History of Tile, Mortar, and		Fluid Drives	☐
Materials	☐	Gears and Reductions	☐
Tools of Trade and Uses	☐	Transmissions	☐
Surface Preparation	☐	Introduction to Basic Pneumatics	☐
Work Layout	☐	Differentials and Rear Ends	☐
Use of Hawk and Trowel	☐	U-Joints and Drives	☐
Strip Setting	☐	Orientation to Heavy Equipment	☐
Open Joint and Cove Installation		Construction Equipment Operators:	
of Glazed Mosaic, Ceramic,		Grade Plans and Earthwork:	
Quarry, and Cement Tile	☐	Earth Moving	☐
Installing Tile on:		Importance of Good Safety	
Floors	☐	Practices	☐
Walls	☐	Measurements Used in Earthwork	☐
Drainboards	☐	Slopes, Grades, and Stakes	☐
Ceilings	☐	Types of Soil and Effects on	
Jarbs	☐	Earthwork	☐
Curbs	☐	Materials and Their Applications:	
Gutters	☐	Aggregates and Their Uses	☐
Columns	☐	Concrete	☐
Stairs	☐	Asphalt	☐
Domes	☐	Application of Asphalt Pavement	☐
Arches	☐	Application of Concrete Pavement	☐
Panels	☐	Shovel and Crane Type Equipment:	
Fireplaces	☐	Shovel	☐
Tile Classifications	☐	Crane	☐
Glass Mosaics	☐	Clamshell	☐
New Materials	☐	Dragline	☐
Other (specify)	☐	Backhoe	☐
Operating Engineer:		Gradeall	☐
Historical Background	☐	Mucking Machine	☐
Safety and First Aid	☐	Excavator	☐
Use of Tools:		Pile Driver	☐
Handtools and Gages	☐	Material Hoisting and Handling	
Power Tools	☐	Equipment:	
Shop Tools and Equipment	☐	Cranes and Derricks	☐
Types of Instruments:		Belt Type Conveyors	☐
Leveling Instruments	☐	Tractors:	
Measuring Instruments	☐	Crawler Type Bulldozers and	
Uses of Instruments	☐	Rippers	☐
Vehicle Code	☐	Wheel Type Bulldozers	☐
Rigging:		Graders:	
Cable and Wire Rope	☐	Motorized	☐
Clamps and Fittings	☐	Towed	☐
Slings and Spreaders	☐	Scrapers:	
Blocks, Pulleys, and Swivels	☐	Self Powered Type Scrapers	☐
Weight and Materials	☐	Towed	☐
Proper Lifting Procedures	☐	Tandem	☐
Introduction to Internal		Self Loading	☐
Combustion Engines	☐	Land Levelers	☐
		Loaders:	
		Front End	☐

SUBJECTS AND COURSES—Continued

Side	☐
Rear	☐
Overhead	☐
Compaction Equipment:	
Tandem, Three Wheel, Grid and	
Offset Rollers	☐
Sheepfoot, Pneumatic and Wobbly	
Wheel Rollers	☐
Vibrating Compactors and Tampers	☐
Work Cycles:	
Advanced Concepts in Measurement	☐
Understanding Plans and	
Specifications in Earthwork	☐
Job Methods:	
Haul Engineering	☐
Ditches, Ditch Gradients, Earthwork	
and Equipment Selection	☐
Bids, Contracts, and	
Performances	☐
Dredge Operator:	
Introduction to Dredging	☐
Types of Dredges	☐
Dredge Plant Components	☐
Dredge Operation	☐
Seamanship:	
Anchors	☐
Small Boat Handling	☐
Compass	☐
Weather	☐
Marinaspike Seamanship	☐
Plant Equipment Operator	☐
Rock, Sand and Gravel Operator:	
Crushers	☐
Types of Crushers	☐
Batch Plants	☐
Processing Plants	☐
Concrete:	
Grizzlies and Screens	☐
Feeders	☐
Aggregate Washing and	
Separating Equipment	☐
Kinds of Batching Equipment	☐
Batch Operation	☐
Trolley Batchers	☐
Single Material Batchers	☐
Aggregate Measurement	☐
Weigh Batchers	☐
Cement Weigh Hoppers	☐
Multiple Batchers	☐
Batching Systems	☐
Fixed Plants	☐
Mass Concrete Plant	☐
Transit Mix Fixed Plant	☐
Plant Maintenance and Safety	☐

Asphalt:	
Central Mixing Plants	☐
Cold Aggregate Feeder or Hopper	☐
Cold Aggregate Elevator	☐
Dryer Operation	☐
Dust Operation	☐
Hot Elevator	☐
Graduation Control Unit	☐
Bituminous Mixer	☐
Fines Feeder	☐
Boiler	☐
Belt Conveyor	☐
Bucket Loader	☐
Bitumen Heater	☐
Asphalt Kettle	☐
Asphalt Distributor	☐
Asphalt Tank	☐
Trailer Tank	☐
Liquid Storage Tank	☐
Water Tank	☐
Small Continuous Mix Plant	☐
Conveyors:	
Types of Conveyors	☐
Construction of Conveyors	☐
Conveyor Parts	☐
Adjustment	☐
Alinement	☐
Holdbacks	☐
Hoppers and Loading	☐
Spillage	☐
Troughs and Skirts	☐
Trippers	☐
Safety Devices	☐
Inclines	☐
Capacities	☐
Shiftable Frames	☐
Rose Belt	☐
Extensible Conveyor	☐
Rough Loader	☐
Stacker	☐
Controls:	
Type of Controls	☐
Operation of Controls	☐
Specialized Tools:	
Special Tools Needed on Batch	
Plants	☐
Tools and Equipment Needed for	
Service and Lubrication	☐
Job Methods, Planning and Layout:	
Selection of Equipment for Job	☐
Selection of Materials Needed	☐
Troubleshooting	☐
Job Problems	☐
Methods of Measurement	☐

SUBJECTS AND COURSES—Continued

Heavy Duty Repairman:

Welding:

- Principles of Welding and Cutting ☐
- Oxyacetylene ☐
- Electric ☐
- Soldering ☐
- Preventive Maintenance ☐
- Safety ☐

Internal Combustion Engines:

- Engine Types ☐
- Stationary Parts ☐
- Major Moving Parts ☐
- Typical Diesel Engines ☐
- High Compression Gas Engines ☐
- Auxiliary Systems ☐

Crawler Track and Wheel Systems:

- Frames ☐
- Springs ☐
- Undercarriage:
 - Track ☐
 - Rollers ☐
 - Idlers ☐
 - Sprockets ☐
 - Truck Frames ☐
 - Rebuilding Techniques ☐

Preventive Maintenance

Safety

Bases and Carriers:

- Stationary ☐
- Mobile ☐

Tires and Care:

- Types of Tires ☐
- Air Pressure ☐
- Wheel Failure ☐
- Tire Repair ☐

Brake Systems:

- Mechanical ☐
- Hydraulic ☐
- Electrical ☐
- Vacuum ☐
- Brake Booster ☐
- Repairs ☐

Clutches and Frictions:

- Description and Operation ☐
- Inspection and Maintenance ☐
- Minor Adjustments ☐
- Replace Clutch Springs and Release Bearings ☐
- Clutch Troubleshooting ☐

Steering Systems:

- Conventional ☐
- Hydraulic Ram ☐
- Electrical ☐
- Clutch Brake ☐
- Tracks ☐

- Wheels ☐
- Legs ☐

Electricity:

- Coils ☐
- Distributors ☐
- Starter Motors and Controls ☐
- Alternators, Regulators, Generators and Rectifiers ☐
- Heavy Duty Lightning Systems ☐
- Ignition Systems ☐
- Storage Batteries ☐
- Tune-Up Procedures ☐
- Accessories ☐

Hydraulics:

- Introduction ☐
- Liquid Flow ☐
- Pipe Fittings and Seals ☐
- Valves and Pumps ☐
- Hydraulic Systems ☐

Pneumatics:

- Basic Pneumatics ☐
- Compressors ☐

Convertors:

- Uses ☐
- Types ☐
- Charging System ☐
- Lockup ☐
- Overrunning Clutch ☐
- Heat Exchangers ☐
- Types of Fluids ☐
- Filter System ☐

Fluid Drive:

- Types of Fluid Drive ☐
- Service and Maintenance ☐

Gear and Reductions:

- Multiple Speed ☐
- Multiple Drive ☐

Transmissions:

- Function ☐
- Gearing ☐
- Gear Material ☐
- Types ☐
- Disassembly ☐
- Cleaning and Inspection ☐
- Reassembly ☐
- Adjustment ☐

Final Drives:

- Single Reduction ☐
- Planetary ☐

Differentials and Rear Ends:

- Single Reduction Axles ☐
- Two-Speed Axles ☐
- Tandem Drive Axles ☐
- Axle Shifting Systems ☐

SUBJECTS AND COURSES—Continued

U-Joints and Drive Lines:

- Types ☐
- Inspection ☐
- Manual and Parts Book ☐
- Use and Familiarization ☐
- Engine Principles and Theory ☐
- Fuel Systems and Carburetion ☐
- Air Intake and Exhaust Systems ☐
- Cooling and Lubrication Systems ☐
- Electricity:

- Theory of Electricity ☐
- Parallel Circuits ☐
- Series Circuits ☐
- Ohm's Law ☐
- Fundamentals of Electricity ☐
- Circuits, Symbols, and Conductors ☐
- Relays and Switches ☐
- Magnetism and Induction ☐
- Electrical Measurement ☐
- AC and DC Generation ☐
- Motors ☐
- DC Circuits ☐
- Primary and Secondary Batteries ☐
- AC Current ☐
- Direct Current Motors and Controls ☐
- Single and Three Phase Circuits ☐
- Transformers and Regulators ☐
- Polyphase Induction Motors ☐
- Synchronous Motors ☐
- Set Synchronous Apparatus ☐
- Single Phase Motors ☐
- Circuit-Protective and Switching Equipment ☐
- Electrical Instruments and Measurement ☐
- Electron Tubes and Devices ☐
- Types and Sizes of Wire ☐
- Wire Connections and Joints ☐
- Wiring of Heavy Appliances ☐
- Isolated and Standby Power Plants ☐

Special Engines:

- Gasoline ☐

- Diesel ☐
- Steam ☐
- Electric ☐

Hydraulic Systems:

- Basic Types of Hydraulic Systems ☐
- Similarity to Air Pressure ☐
- Pascal's Law ☐
- Hydraulic Properties of Oil ☐
- Basic Hydraulic Pump ☐
- Advantages of Hydraulic Transmission ☐
- Hydraulic Terms ☐
- Symbols and Circuits ☐
- Pumps and Motors ☐
- Basic Valve Types ☐
- Cylinder Structure ☐
- Type of Hoses ☐
- Seals ☐
- Choosing Right Oil ☐
- Purposes of Reservoirs ☐
- Damaging Effect of Dirt ☐
- Accumulators ☐
- Testing Criteria ☐
- Checking Operating Times ☐
- Primary Visual Checks ☐
- Bypass Testing ☐
- In-Line Testing ☐

Pneumatic Systems:

- Basic Systems ☐
- Compressors ☐
- Portable Type ☐
- Construction ☐
- Rating ☐
- Pressure Control ☐
- Heat ☐
- Rotary Compressors ☐
- Reciprocating Compressors ☐
- Operation ☐
- Air Lines and Accessories ☐
- Air Motors ☐
- Tanks ☐
- Governors ☐
- Other (specify) ☐

UNION AFFILIATION

Record an "X" to indicate union affiliation.

International Unions:

- Bricklayers, Masons, and Plasterers
- International Union of America ☐
- Brotherhood of Painters, Decorators, and Paperhangers of America ☐
- International Association of Heat and Frost Insulators and Asbestos Workers ☐

International Association of Bridge, Structural, and Ornamental

- Iron Workers ☐
- International Union of Operating Engineers ☐
- International Union of Elevator Constructors ☐

UNION AFFILIATION—Continued

Laborers International Union of
North America ☐

Operative Plasterers and Cement
Masons International Association
of United States and Canada ☐

United Association of Journeymen
and Apprentices of the Plumbing and
Pipefitting Industry of the
United States and Canada ☐

United Brotherhood of Carpenters and
Joiners of America ☐

United Rubber, Cork, Linoleum, and
Plastic Workers Union ☐

United Slate, Tile, and Composition
Roofers, Damp and Waterproof
Workers Association ☐

Wood, Wire, and Metal Lathers
International Union ☐

Other (specify) ☐

Unions:

Acoustical, Drywall, Insulation, and
Scaffolding ☐

Acoustic Drywall Workers ☐

Asbestos Workers ☐

Bricklayers ☐

Bricklayers and Masons ☐

Bricklayers and Stonemasons ☐

Bricklayers and Tile Setters ☐

Carpenters ☐

Carpenters and Joiners ☐

Cement Masons ☐

Cement Finishers and Plasterers ☐

Elevator Constructors ☐

Floor Layers ☐

Glaziers and Glass Workers ☐

Gunitite Workers ☐

Hardwood Floor Carpenters ☐

Hod Carriers and Laborers ☐

House Movers ☐

Iron Workers ☐

Iron Workers Ornamental and
Architectural Local ☐

Iron Workers and Shopmans Local ☐

Laborers ☐

Laborers and Plaster Tenders ☐

Lathers ☐

Lathers Nail and Wood Local ☐

Linoleum, Carpet, and Soft Tile Layers ☐

Marble Masons ☐

Operating Engineers ☐

Operating Engineers Hoisting and
Portable Local ☐

Ornamental Iron Workers Local ☐

Painters ☐

Painters and Decorators ☐

Painters, Decorators, and
Paperhangers ☐

Pile Drivers ☐

Pile Drivers, Bridge, Wharf, and Dock
Builders Local ☐

Plasterers ☐

Plasterers and Cement Finishers ☐

Plasterers and Cement Masons ☐

Plumbers ☐

Plumbers and Fitters ☐

Plumbers and Steamfitters ☐

Reinforced Iron Workers ☐

Refrigeration, Air Conditioning,
and Fitters ☐

Roofers ☐

Shinglers ☐

Shinglers and Drywall Installers ☐

Sprinkler Fitters ☐

Steamfitters ☐

Terrazzo Workers and Machine Operators ☐

Tile Layers ☐

Tile Setters ☐

Tile and Marble Setters Helpers ☐

Tile, Marble, and Terrazzo Helpers ☐

United Mine Workers, Construction Local ☐

Other (specify) ☐

PRODUCTS

Record an "X" to indicate product produced.

Construction Products:

Abutments ☐

Airports ☐

Alleys ☐

Aluminum Mills ☐

Antennas ☐

Apartments ☐

Aqueducts ☐

Asylums ☐

Athletic Fields ☐

Auditoriums ☐

Ball Parks ☐

Boilers ☐

Bomb Shelters ☐

Breakwaters ☐

Bridges ☐

Canals ☐

Canal Locks ☐

PRODUCTS—Continued

Canal Gates	☐	Parking Lots	☐
Caissons	☐	Piers	☐
Cemetaries	☐	Pilot Plants	☐
Cesspools	☐	Pipelines	☐
Chemical Plants	☐	Pumping Stations	☐
Chimneys	☐	Radio Transmitting Towers	☐
Churches	☐	Railroad Roadbeds	☐
Clean Rooms	☐	Railroad Structures	☐
Cofferdams	☐	Rapid Transit Structures	☐
Conduits	☐	Refineries	☐
Culverts	☐	Reservoirs	☐
Curbs	☐	Roads	☐
Dams	☐	Rolling Mills	☐
Dikes	☐	Recreational Buildings	☐
Drainage Canals	☐	Residence	☐
Elevators	☐	Single Family	☐
Electric Power Transmission Towers	☐	Multi-Family	☐
Escalators	☐	Restaurants	☐
Farm Buildings	☐	Sewers	☐
Factories	☐	Sewage Plants	☐
Fences	☐	Shopping Centers	☐
Financial Institutions	☐	Silos	☐
Fire Escapes	☐	Stadia	☐
Flood Control Projects	☐	Stores	☐
Freeways	☐	Subways	☐
Garages	☐	Swimming Pools	☐
Gas Mains	☐	Television Transmitting Towers	☐
Golf Courses	☐	Telephone Transmission Lines	☐
Grain Elevators	☐	Transportation Terminals	☐
Harbors	☐	Tunnels	☐
High Rise Buildings	☐	Viaducts	☐
Highways	☐	Waste Disposal Plants	☐
Hospitals	☐	Waterways	☐
Hotels	☐	Wharfs	☐
Houses	☐	Retaining Walls	☐
Hydroelectric Plants	☐	Sidewalks	☐
Industrial Furnaces	☐	Storage Tanks	☐
Industrial Ovens	☐	Structural Steel Framework	☐
Industrial Plants	☐	Scaffolds	☐
Institutional Buildings	☐	Service Stations	☐
Irrigation Projects	☐	Windmills	☐
Jettys	☐	Other (specify)	☐
Kilns	☐		
Laboratories	☐	Systems:	
Levees	☐	Air Conditioning	☐
Libraries	☐	Heating	☐
Manholes	☐	Piping:	
Marinas	☐	Water	☐
Mine Loading and Unloading Stations	☐	Air	☐
Missile Facilities	☐	Gas	☐
Mausoleums	☐	Steam	☐
Motels	☐	Acid	☐
Museums	☐	Circulating	☐
Oil Refineries	☐	Cooling	☐
Parks	☐	Plumbing	☐

PRODUCTS—Continued

Refrigeration ☐
 Sprinkler ☐

Steam ☐
 Ventilating ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Construction Machines and

Equipment:

Canal construction machines:

Concrete joint machine ☐
 Canal liner machine ☐
 Canal trimmer machine ☐

Earth compacting machines:

Hydra hammer aero stamper ☐
 Roller compactor ☐
 Road pactor ☐
 Form tamper ☐
 Blob compactor ☐
 Tamping machine ☐

Earth moving equipment:

Backhoe ☐
 Loader ☐

Power shovel:

Backhoe shovel ☐
 Dragline shovel ☐
 Clamshell shovel ☐
 Highline cable equipment ☐
 Remote control earthmover ☐
 Trencher ☐
 Skiploader ☐

Earth grading machines:

Push-pull scraper ☐
 Selfloading scraper ☐
 Motor grader ☐
 Bulldozer ☐
 Tractor loader ☐
 Auto grader ☐

Excavating machines:

Mass excavator ☐
 Wheel excavator ☐
 Tower excavator ☐

Paving machines and equipment:

Asphalt berm curber ☐
 Asphalt paver ☐
 Asphalt roller ☐
 Asphalt screeder ☐
 Asphalt spreader ☐
 Asphalt heater and planer ☐
 Concrete berm curber ☐
 Concrete curer ☐
 Concrete lift slab ☐
 Concrete planer ☐
 Concrete spreader ☐
 Concrete mechanical finisher ☐

Concrete mobile form traveler ☐

Concrete slip form hydraulic
 equipment ☐

Pavement breaker ☐

Pipeline construction machines:

Cast-in-place pipelayer ☐
 Pipemobile ☐
 Pipe wrapper, cleaner, bender ☐
 Tar pipelining machine ☐

Piledriver:

Floating piledriver ☐
 Mobile piledriver ☐

Tunnel construction machines:

Tunnel boring machines ☐
 Tunnel heading shield machine ☐
 Tunnel mucking machine ☐
 Tunnel mole boring machine ☐

Mixing machines:

Concrete mixer ☐
 Concrete batch plant ☐
 Concrete dual drum mixer ☐
 Concrete gun mixing machine ☐

Pumping equipment:

Cement pump ☐
 Concrete gun pump ☐
 Concrete pumping machine ☐
 Mobile concrete pumping machine ☐

Drilling machines:

Well drilling machines:
 Cable tool ☐
 Rotary tool ☐
 Water well drilling machines ☐

Dredges:

Clamshell dredges ☐
 Pump dredges ☐

Hoisting equipment:

Truck crane ☐
 Long boom truck crane ☐
 Tower crane ☐
 Elevator ☐
 Cherry picker ☐
 Chicago boom hoist ☐
 Mobile lift hoist ☐
 Stiff leg hoist ☐
 Tugger hoist ☐

Tools:

Handtools: ☐
 Drills ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Chisels ☐
Files ☐
Knives ☐
Rules ☐
Scissors ☐
Tape Measures ☐
Scribers ☐
Wire Cutters ☐
Levels ☐
Mauls ☐
Mallets ☐
Screwdrivers ☐
Brushes ☐
Wrenches ☐
Clippers ☐
Needle ☐
Square ☐
Trowels ☐
Sawing Palms ☐
Hammers ☐
Saws ☐
Brick Hammers ☐
Jointers ☐
Brick Cutting Chisels ☐
Planes ☐
Straight Edge ☐
Floats ☐
Whips ☐
Darbies ☐
Finishing Trowel ☐
Pry Bars ☐
Shears ☐
Serrated Trowels ☐
Floor Rollers ☐
Putty Knives ☐
Hacksaws ☐
Bolt Cutters ☐
Punches ☐
Hatchets ☐
Staplers ☐
Pincers ☐
Scrapers ☐
Paint Rollers ☐
Wallpaper Rollers ☐
Reamers ☐
Brace and Bits ☐
Pipe Threaders and Dies ☐
Pipe Benders ☐
Roofing Knives ☐

Linoleum Knives ☐
Mops ☐
Crowbar ☐
Pointing Trowel ☐
Stone Masons Hammer ☐
Other (specify) ☐

Power Handtools:

Rivet Guns ☐
Power Drills ☐
Power Actuated Fastening Devices ☐
Spray Gun ☐
Calking Guns ☐
Grouting Guns ☐
Gunite Guns ☐
Cement Guns ☐
Power Saws ☐
Pneumatic Drills ☐
Pneumatic Hammers ☐
Other (specify) ☐

Equipment:

Soldering Equipment ☐
Brazing Equipment ☐
Welding Equipment ☐
Tar Kettles ☐
Lead Pots ☐
Blow Torches ☐
Stud Welding Guns ☐
Other (specify) ☐

Work Aids:

Blueprints ☐
Sketches ☐
Building Plans ☐
Architects Drawings ☐
Bills of Materials ☐
Work Order Specifications ☐
Structural Specifications ☐
Construction Plans ☐
Contract Specifications ☐
Compasses ☐
Chalk ☐
Plumb bob ☐
Crayons ☐
Grading Stakes ☐
Plumb Line ☐
Transit ☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial	☐	Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

CHEMICALS AND ALLIED PRODUCTS PROCESSING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates processing activities concerned with manufacture of:

- Basic industrial chemicals ☐
- Chemical materials used in manufacturing of chemical products ☐
- Chemical products used as raw materials in other industries ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers processing materials to produce:

- Industrial organic or inorganic basic chemical products ☐
- Plastics materials or synthetic resins ☐
- Synthetic rubber ☐
- Synthetic and other man-made fibers ☐
- Biological or botanical drugs, medicinal chemicals, or pharmaceutical preparations ☐
- Soaps, detergents, cleaning preparations, or surface acting agents ☐
- Perfumes, cosmetics, and other toilet preparations ☐
- Paints, varnishes, enamels, lacquers, and allied products ☐
- Gum and wood chemicals ☐
- Agricultural chemicals ☐
- Adhesives and gelatins ☐
- Explosives ☐
- Printing inks ☐
- Carbon and lamp blacks ☐
- Ammunition ☐
- Coal tar derivative products ☐
- Compressed and liquefied gases ☐
- Processed oils and fats products ☐
- Other (specify) ☐

- Prepares work and worker schedules ☐
- Assigns workers specific duties ☐
- Interprets processing orders, specifications, and technical data for workers ☐
- Inspects product for conformance with specifications ☐
- Trains workers in machine or equipment operations ☐
- Gives directions to workers concerning processing duties ☐
- Advises workers on methods and procedures for solving work problems ☐
- Reviews laboratory and test reports on materials and products ☐
- Orders changes in processing procedures or equipment operation ☐
- Coordinates processing activities with activities of other units or departments ☐
- Enforces worker compliance with established procedures, regulations and safety rules ☐
- Requisitions materials and supplies for scheduled production ☐
- Notifies maintenance personnel of equipment or machine repairs required ☐
- Keeps processing and production records ☐
- Prepares reports on activities and production ☐
- Other (specify) ☐

WHAT THE WORKER DOES—Continued

Reads or reviews:

- Processing schedules ☐
- Product specifications ☐
- Material specifications ☐
- Production schedules ☐
- Chemical formulas ☐
- Product formulas ☐
- Other (specify) ☐

Determines:

- Setup of processing machiner and equipment ☐
- Product processing sequences and priorities ☐
- Material requirements ☐
- Processing requirements ☐
- Routing of inprocess materials through units ☐
- Adjustments to equipment or machinery ☐
- Other (specify) ☐

Sets up and adjusts machines or equipment for other workers

Operates, controls, or tends machines or equipment to:

- Reduce materials into specified size ☐
- Mix, combine, or blend materials for further processing ☐
- Melt or fuse materials into single mass or compound ☐
- Obtain mixture or compound of specific color, texture, or other characteristic ☐
- Cause chemical reaction that changes chemical composition ☐
- Distill liquid or semi-liquid materials for recovering specified substances ☐
- Dry or remove excess moisture from materials or products ☐
- Shape materials ☐ products ☐
- Mold materials or products ☐
- Solidify materials or products ☐
- Roll material into specified product ☐
- Extrude materials into specified product ☐
- Produce product of specified finish or thickness ☐
- Produce products from processed chemicals ☐
- Fill containers with products ☐
- Package product ☐
- Other (specify) ☐

Installs, aligns, and secures:

- Molds or dies in machines ☐
- Cutting or grinding tools in toolholders ☐
- Machine attachments ☐
- Work piece in holding fixture or jig ☐
- Other (specify) ☐

Sets equipment or machine controls for specified:

- Temperature ☐
- Pressure ☐
- Vacuum ☐
- Material feed rates in machines ☐
- Flow rates of materials, gases, or liquids through processing units ☐
- Processing timing cycle ☐
- Routing of materials through processing units ☐
- Material weight ☐
- Volume of materials ☐
- Processing sequences ☐
- Other (specify) ☐

Moves levers or controls to:

- Start or stop machines or equipment ☐
- Begin processing operations ☐
- Regulate chemical reactions or materials ☐
- Regulate material levels in equipment ☐
- Adjust flow of liquids, gases, or materials through processing units ☐
- Adjust operational performance of machines or equipment ☐
- Transfer material into and from machines or equipment ☐
- Perform machine operations ☐
- Other (specify) ☐

Monitors:

- Chemical reactions of materials ☐
- Gages, meters, and recording instruments ☐
- Television pictures of processing operations ☐
- Operational performance of machines and equipment ☐
- Other (specify) ☐

Obtains and trucks materials to work station

- Weights or measures materials specified on formulas ☐
- Dumps materials into machine hopper or onto conveyor ☐
- Pumps specified materials into equipment ☐

WHAT THE WORKER DOES—Continued

- | | |
|---|--|
| <p>Opens valves and cross connections to route materials through units ☐</p> <p>Gives workers of crew operational directions ☐</p> <p>Observes inprocess materials in units for:</p> <p> Color ☐</p> <p> Texture ☐</p> <p> Consistency ☐</p> <p> Chemical reaction ☐</p> <p> Other desirable characteristics ☐</p> <p>Draws sample of material or product for testing or laboratory analysis ☐</p> <p>Performs on-station tests on material or product ☐</p> <p>Analyzes results of laboratory analysis ☐</p> <p>Correlates observations and data to determine adjustments required ☐</p> | <p>Inspects machines or equipment for leaks or hazards ☐</p> <p>Records gage and meter readings in station log ☐</p> <p>Notifies supervisory personnel of malfunctioning machines or equipment ☐</p> <p>Assists in operation of equipment ☐</p> <p>Removes materials or products from machine, equipment or conveyor ☐</p> <p>Cleans machine or equipment ☐</p> <p>Connects or disconnects lines and hoses to or from machines or equipment ☐</p> <p>Flushes out lines and equipment ☐</p> <p>Assembles components into specified products ☐</p> <p>Assists operator in processing materials or products ☐</p> <p>Other (specify) ☐</p> |
|---|--|

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibility.

- | | |
|--|--|
| <p>Management ☐</p> <p>Supervisors ☐</p> <p>Other Supervisory Personnel ☐</p> <p>Operators ☐</p> <p>Workers ☐</p> | <p>Helpers ☐</p> <p>Laboratory Personnel ☐</p> <p>Quality Control Personnel ☐</p> <p>Other (specify) ☐</p> |
|--|--|

EDUCATION AND TRAINING

Record an "X" to indicate education or training required.

- | | |
|--|---|
| <p>Elementary ☐</p> <p>High School ☐</p> <p>Junior College ☐</p> <p>Technical School ☐</p> | <p>Vocational School ☐</p> <p>On-the-job Training ☐</p> <p>Other (specify) ☐</p> |
|--|---|

SUBJECTS AND COURSES

Record an "X" to indicate subjects or courses that develop skills for the occupation.

- | | |
|--|---|
| <p>Related Subjects and Courses:</p> <p> Practical Arithmetic ☐</p> <p> Applied Science ☐</p> <p> Applied Chemistry ☐</p> <p> Properties of Materials ☐</p> <p> Processes of Industry ☐</p> <p> Materials of Industry ☐</p> <p> Production Analysis ☐</p> <p> Pneumatics ☐</p> <p> Industrial Instrumentation ☐</p> <p> Human Behavior ☐</p> <p> Elements of Supervision ☐</p> | <p>Foremanship and Supervision ☐</p> <p>Formulas ☐</p> <p>Other (specify) ☐</p> <p>Chemical Processing Unit Operator:</p> <p> Adhesives Technology ☐</p> <p> Quantitative Analysis ☐</p> <p> Instrumental Analysis ☐</p> <p> Organic Chemistry ☐</p> <p> Inorganic Chemistry ☐</p> <p> Chemical Technology ☐</p> <p> Heat Transfer ☐</p> |
|--|---|

SUBJECTS AND COURSES—Continued

Principles of Polymerization	☐	Dies and Molds	☐
Applied Chemistry of Plastics	☐	Thermo-folding Molding	☐
Materials	☐	Injection Molding	☐
Sources of Basic Materials for	☐	Blow Molding Processes	☐
Plastics	☐	Mass Transfer	☐
Properties of Thermoplasts	☐	Transport Phenomena	☐
Synthetic Elastomers	☐	Other (specify)	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines:

Mixers and blenders:

Banbury mixer	☐
Continuous processing mixer	☐
Tumbler mixer	☐
Remote controlled-tumbler barrels	☐
Rotary mixer	☐
Pelletizing mixer	☐
Screw type mixer	☐
Cratcher	☐
Paddle type blender	☐
Mulling machine	☐
Other (specify)	☐

Crushers and grinding mills:

Crushers:

Jaw crusher	☐
Hammermill	☐

Grinding mills:

Ball mill	☐
Remote controlled ball mill	☐
Rod mill	☐
Pulverizing mill	☐

Other (specify)

Filter machines:

Hydraulic filter machine	☐
Filter press	☐
Rotary leaf filter	☐
Plate and frame filter	☐
Vacuum pan filter	☐
Rotary vacuum drum filter	☐
Other (specify)	☐

Presses:

Hydraulic press	☐
Dehydrating press	☐
Extruder press	☐
Other (specify)	☐

Sifters and screens:

Agitator sifter	☐
Silk screen shaker	☐

Vibratory screens	☐
Sizing screens	☐
Other (specify)	☐

Compressors:

Gas compressors	☐
Air compressors	☐
Other (specify)	☐

Miscellaneous machines:

Beater cutter machines	☐
Blenders	☐
Centrifuges	☐
Pumps	☐
Vacuum pumps	☐
Slitting knives	☐
Roller machines	☐
Calender roll mill	☐
Power saws	☐
Pulp machine	☐
Automatic scraper machine	☐
Seed cleaning machine	☐
Shredder machine	☐
Banding machine	☐
Swaging machine	☐
Primer press machine	☐
Sizing machine	☐
Grooving machine	☐
Casting machine	☐
Die casting machine	☐
Molding machine	☐
Centerless grinding machine	☐
Chamfering machine	☐
Loading machine	☐
Cutoff machine	☐
Embossing machine	☐
Filling machine	☐
Foiling machine	☐
Packing machine	☐
Crimping machine	☐
Knurling machine	☐
Screw machine	☐
Graining press machine	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Spray machine ☐
 Lubricating machine ☐
 Lacquering machine ☐
 Coating machine ☐
 Filament spinning machine ☐
 Other (specify) ☐

Tools:

Wrenches ☐
 Bars ☐
 Screwdrivers ☐
 Pipe wrenches ☐
 Pliers ☐
 Other (specify) ☐

Equipment:

Absorption equipment ☐
 Autoclaves ☐
 Clarifiers ☐
 Setting tanks ☐
 Calciners ☐
 Concentrators ☐
 Thickeners ☐
 Condensers ☐
 Converters ☐
 Crystallizers ☐
 Refrigerated crystallizers ☐
 Culturing equipment ☐
 Digestors ☐
 Dissolvers ☐
 Dehydrators ☐
 Diffusers ☐
 Distilling equipment: ☐
 Fractionating towers ☐
 Batch stills ☐
 Continuous processing stills ☐
 Semi-continuous processing stills ☐

Driers:

Atmospheric driers: ☐
 Tunnel atmospheric driers ☐
 Room atmospheric driers ☐
 Cabinet atmospheric driers ☐
 Rotary continuous driers ☐
 Tunnel driers ☐
 Vacuum drum driers ☐
 Centrifugal driers ☐
 Steam driers ☐
 Hot water type driers ☐
 Hot air type driers ☐
 Spray driers ☐

Evaporators

Granulators ☐

Gas generators ☐

Kettles:

Compounding kettles ☐

Steam jacketed kettles ☐
 Mixer kettles ☐
 Heat exchangers ☐
 Vacuum pans ☐
 Furnaces: ☐
 Annealing furnaces ☐
 Reduction furnaces ☐
 Rotary furnaces ☐

Kilns ☐
 Homogenizers ☐
 Hydrators ☐
 Impregnators ☐
 Liquefiers ☐
 Moisturizers ☐
 Nitratators ☐
 Polymerizers ☐
 Precipitators ☐

Purifiers:

Extractor columns ☐
 Grease extractors ☐
 Solvent extractors ☐
 Purification towers ☐
 Gas scrubbers ☐
 Oil scrubbers ☐

Caustic wash units ☐

Deoxidizers ☐

Regenerators ☐

Reactors:

Catalytic reactors ☐
 Chemical reactor vats ☐

Saturators ☐

Separating equipment:

Acidulation tanks ☐
 Gravity separators ☐

Weighing scales:

Platform scales ☐
 Balance scales ☐
 Weighing hoppers ☐
 Weighing tanks ☐

Other (specify) ☐

Work Aids:

Meters:

Hydrometer ☐
 Calorimeter ☐
 Salinometer ☐
 Manometer ☐
 Viscometer ☐
 Titrometer ☐
 Turbidimeter ☐
 Ph meter ☐
 Flowmeter ☐
 Refractometer ☐
 Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Manuals:

- Processing manuals ☐
- Equipment operation manuals ☐
- Safety manuals ☐
- Technical manuals ☐
- Other (specify) ☐

Schedules:

- Production schedules ☐
- Processing schedules ☐
- Work schedules ☐
- Other (specify) ☐

Specifications:

- Processing specifications ☐

- Material specifications ☐
- Product specifications ☐
- Other (specify) ☐

Formulas:

- Chemical material formulas ☐
- Compounding formulas ☐
- Product formulas ☐
- Other (specify) ☐

- Station logs ☐
- Production forms ☐
- Testing forms ☐
- Other (specify) ☐

PRODUCTS

Record an "X" to indicate type of product processed or manufactured.

Basic Industrial Chemicals:

Alkalines and chlorine:

- Caustic potash ☐
- Caustic soda ☐
- Sal soda ☐
- Sodium hydroxide ☐
- Other (specify) ☐

Industrial gases:

- Acetylene ☐
- Carbon dioxide ☐
- Dry ice ☐
- Helium ☐
- Hydrogen ☐
- Neon ☐
- Nitrogen ☐
- Other (specify) ☐

Cyclic chemicals:

Cyclic intermediates:

- Azobenzene ☐
- Naphthol ☐
- Naphthalene ☐
- Toulene ☐
- Tuluol ☐
- Other (specify) ☐

Cyclic coal tar crudes:

- Light oils ☐
- Coal tar ☐
- Coal tar acids ☐
- Creosote ☐
- Tar ☐
- Other (specify) ☐

Pigments:

Inorganic pigments:

- Bone black ☐
- Coloring pigments ☐
- Lampblack ☐
- Litharge ☐
- Redlead pigment ☐
- Zinc oxide pigments ☐
- Other (specify) ☐

Organic pigments:

- Coloring pigments ☐
- Eosine toners ☐
- Food dyes and coloring ☐
- Lake red "C" toners ☐
- Other (specify) ☐

Dyes:

- Color lakes and toners ☐
- Acid dyes ☐
- Stilbene dyes ☐
- Nitro dyes ☐
- Other (specify) ☐

Non-cyclic organic chemicals:

- Acetic acid ☐
- Denatured alcohol ☐
- Citrates ☐
- Monosodium glutamate ☐
- Propylene ☐
- Other (specify) ☐

Industrial Inorganic Chemicals:

- Alums ☐

PRODUCTS—Continued

Ammonia liquor ☐
 Boric acid ☐
 Brine ☐
 Metallic salts ☐
 Calcium peroxide ☐
 Rare earth metallic salts ☐
 Alkali metals ☐
 Boron compounds ☐
 Inorganic acids ☐
 Other (specify) ☐

Chemical based products:

Plastics materials:

Polyesters ☐
 Casein plastics ☐
 Regenerated cellulose ☐
 Vulcanized fibers ☐
 Resins ☐
 Other (specify) ☐

Synthetic Rubber:

Butadiene-styrene copolymers ☐
 Butyl rubber ☐
 Vulcanizable elastomers ☐
 Non-vulcanizable elastomers ☐
 Isobutylene-Isoprene rubbers ☐
 Isoprene rubbers ☐
 Polybutadiene rubbers ☐
 Silicone rubbers ☐
 Other (specify) ☐

Cellulosic man-made fibers:

Acetate fibers ☐
 Rayon fibers ☐
 Cellulose fibers ☐
 Nitrocellulose fibers ☐
 Viscose fibers ☐
 Other (specify) ☐

Synthetic organic fibers:

Acrylic fibers ☐
 Nylon fibers ☐
 Polyester fibers ☐
 Saran fibers ☐
 Vinyl chloride fibers ☐
 Other (specify) ☐

Biological drugs:

Serums ☐
 Toxins ☐
 Vaccines ☐
 Venoms ☐
 Viruses ☐
 Other (specify) ☐

Medicinal chemicals, botanical drugs:

Caffeine ☐
 Cocaine ☐
 Hormones ☐
 Menthol ☐
 Mercury compounds ☐
 Sulfa drugs ☐
 Other (specify) ☐

Pharmaceutical preparations:

Antacids ☐
 Barbituates ☐
 Cold remedies ☐
 Cough medicines ☐
 Elixirs ☐
 Laxatives ☐
 Ointments ☐
 Suppositories ☐
 Tinctures ☐
 Other (specify) ☐

Soaps and detergents:

Soap ☐
 Synthetic organic detergents ☐
 Inorganic alkaline detergents ☐
 Washing compounds ☐
 Other (specify) ☐

Speciality cleaning compounds:

Household ammonia ☐
 Paint and wallpaper cleaners ☐
 Rug cleaners ☐
 Sweeping compounds ☐
 Other (specify) ☐

Polishing preparations:

Automobile polishes ☐
 Floor waxes ☐
 Metal polishes ☐
 Furniture polishes ☐
 Other (specify) ☐

Sanitation preparations:

House deodorants ☐
 Fly sprays ☐
 Insect powder ☐
 Household rat and ant poisons ☐
 Moth repellants ☐
 Other (specify) ☐

Surface active and finishing agents:

Emulsifiers ☐
 Leather finishing agents ☐
 Wetting agents ☐

PRODUCTS—Continued

Penetrants	☐	Animal dips	☐
Other (specify)	☐	Insecticides	☐
		Other (specify)	☐
Sulfonated oils and fats:		Adhesives and gelatin:	
Sulfonated greases	☐	Cements	☐
Soluble oils and greases	☐	Sizes	☐
Sulfonated fats and greases	☐	Glue	☐
Other (specify)	☐	Mucilage	☐
		Gelatin capsules	☐
		Other (specify)	☐
Perfumes, cosmetics, and toilet preparations:		Explosives:	
Bath salts	☐	Blasting powder	☐
Colognes	☐	Dynamite	☐
Dentifrices	☐	Fuses and detonators	☐
Deodorants	☐	Gunpowder	☐
Face powders	☐	TNT	☐
Lipsticks	☐	Nitroglycerin	☐
Shampoos	☐	Other (specify)	☐
Perfumes	☐		
Other (specify)	☐	Printing inks:	
		Gravure inks	☐
Paints, varnishes, and allied products:		Duplicating inks	☐
Calcimines	☐	Lithographic inks	☐
Enamels	☐	Printing inks	☐
Epoxy coatings	☐	Screen processing inks	☐
Paint driers	☐	Other (specify)	☐
Paint removers	☐		
Paints	☐	Miscellaneous products:	
Primers	☐	Carbon black	☐
Putty	☐	Fatty acids	☐
Varnishes	☐	Essential oils	☐
Lacquers	☐	Bluing	☐
Other (specify)	☐	Flares	☐
		Insulating compounds	☐
Gum and wood chemicals:		Oil treating compounds	☐
Naval stores	☐	Fluxes	☐
Ethyl acetate	☐	Ammunition	☐
Hardwood distillates	☐	Plastic wood	☐
Wood alcohol	☐	Parting compounds	☐
Pine oil	☐	Signal flares	☐
Wood extracts	☐	Fireworks	☐
Wood tars and oils	☐	Waxes	☐
Tanning extracts and materials	☐	Writing inks and fluids	☐
Other (specify)	☐	Etching acids	☐
		Lanolin	☐
Agricultural chemicals:		Lighter fluids	☐
Organic fertilizers	☐	Pyrotechnic ammunition	☐
Phosphate fertilizers	☐	Distilled water	☐
Plant foods	☐	Other (specify)	☐
Agricultural pesticides	☐		
D.D.T.	☐		
Fungicides	☐		

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial:		Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

ECONOMICS AND POLITICAL SCIENCE WORK

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Plans, organizes, and conducts:

Economic research and studies relating to:

- Solving problems arising from production and distribution of goods and services ☐
- Agricultural problems pertaining to exploitation of rural resources ☐
- Production and marketing farm products ☐
- Nature of money credit, and credit instruments ☐
- Operation of banks, financial institutions and money exchanges ☐
- Relationship between quantity of money, credit, and purchasing power ☐
- Production, distribution, and use of goods ☐
- Organizational structure of business concerns and its relationship to marketing and production methods ☐
- Movement of goods and commodities between nations ☐
- Exchange controls and operation of foreign exchanges ☐
- Nature and effect of labor legislation on labor force ☐
- Pricing theories ☐
- Effect of taxes and fiscal policy on national income and overall business activity ☐
- Distribution of tax load among taxpayers ☐
- Market conditions in local, regional, and national areas ☐
- Geographic phases of economic activities which affect demand of goods ☐
- Other (specify) ☐

Political research and studies relating to:

- Origin, development, operation, and inter-relationships of political organizations ☐
- Phenomena of political behavior ☐
- Political philosophy and systematic theory ☐
- Government institutions ☐
- Public laws and administration ☐
- Political party systems ☐
- Creation of public opinion through communications media ☐
- Relation of government and business ☐
- International laws and relations ☐
- National and international problems involving areal characteristics and territorial policies affecting internal or external political relationships ☐
- Other (specify) ☐

- Identifies and states nature, scope, and area of research ☐
- Develops methods, techniques, and means of collecting data ☐
- Directs and coordinates activities of research workers ☐
- Organizes and conducts public opinion polls and surveys ☐
- Compiles, analyzes, interprets, or evaluates data on:
 - Prices and pricing practices on commodities ☐
 - Labor supply and demand, wages and hours, and productivity ☐
 - Factors influencing economic trends ☐

WHAT THE WORKER DOES—Continued

- | | | | |
|---|--------------------------|---|--------------------------|
| Commodity market-trends relative to production and future consumption | ☐ | Arbitration and conciliation techniques to settle trade disputes | ☐ |
| Factors involved in production, distribution, and use of commodities | ☐ | Plans to predict cost and success factors | ☐ |
| Effect of government regulations, restrictions or tariffs on: | | Operations research methodology and mathematical formulations | ☐ |
| National economy | ☐ | Plans for establishing domestic and international monetary policies | ☐ |
| Industrial policy | ☐ | Methods and policies for increasing efficiency of management and improving income | ☐ |
| Foreign trade balances | ☐ | Efficient operating methods to improve farm policies of government agencies and farm associations | ☐ |
| International diplomacy, organization and government | ☐ | Agricultural policies to: | |
| International conventions and congresses | ☐ | Increase efficiency of farm management | ☐ |
| Rules, principles, and cases in international law | ☐ | Improve farm income | ☐ |
| Mandates and sanctions | ☐ | Effect favorable agricultural legislation | ☐ |
| Other (specify) | ☐ | Political theory | ☐ |
| Examines or investigates: | | Financial institutional techniques for regulation of: | |
| Methods of financing, production costs and techniques, and marketing policies | ☐ | Lending rates | ☐ |
| Methods of lowering production and distribution costs | ☐ | Fixing of interest or discount rates | ☐ |
| Farm credit structures and institutions | ☐ | Other (specify) | ☐ |
| Banking methods and procedures | ☐ | Forecasts: | |
| Foreign and domestic commodity exchange policies and practices | ☐ | Labor trends | ☐ |
| Agricultural transportation problems | ☐ | Economic trends | ☐ |
| Tariff and tax problems | ☐ | Direction and extent of price movements | ☐ |
| Sources of government income and expenditures | ☐ | Financial activities | ☐ |
| Results of public opinion surveys and polls | ☐ | Production and consumption of goods and crops | ☐ |
| Other (specify) | ☐ | Political trends | ☐ |
| Obtains data by consulting: | | Political activities | ☐ |
| Government officials | ☐ | Other (specify) | ☐ |
| Personnel of civic bodies | ☐ | Acts as: | |
| Personnel of research agencies | ☐ | Economic advisor or consultant to government agencies or industry | ☐ |
| Personnel of political parties | ☐ | Arbitrator or conciliator in resolving labor-management problems | ☐ |
| Other (specify) | ☐ | Political advisor to clients on policies | ☐ |
| Develops or devises: | | Other (specify) | ☐ |
| Monetary policies to establish and maintain desirable balances | ☐ | Advises governmental agencies and industry on: | |
| International trade policies to effect favorable trade balances | ☐ | Economic problems affecting demand for goods as: | |
| Economic reasons for trade restrictions | ☐ | Potential markets | ☐ |
| Policies of investment and transfer of capital | ☐ | Optimum trade routes | ☐ |
| New taxes and methods of collection to eliminate tax inequalities | ☐ | Geographical features | ☐ |
| Methods to utilize maximum assets and develop potential markets | ☐ | Problems affecting: | |
| | | Operating efficiency | ☐ |

WHAT THE WORKER DOES—Continued

- | | | | |
|---|--------------------------|---------------------------------------|--------------------------|
| Marketing methods | ☐ | Petitions to have representatives for | |
| Fiscal problems | ☐ | collective bargaining certified or | |
| Labor problems | ☐ | decertified | ☐ |
| Businesses or groups on tax legislation | | Reapportionment of government | |
| and tax problems | ☐ | legislative personnel | ☐ |
| Charges by government of unfair labor | | Other (specify) | ☐ |
| practices by unions | ☐ | | |

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

- | | | | |
|--|--------------------------|---|--------------------------|
| Educational Personnel | ☐ | Policy Making Boards | ☐ |
| Government Personnel | ☐ | International Trade Commissions | ☐ |
| Agricultural Association Personnel | ☐ | Scientific Personnel | ☐ |
| Industry Management Personnel | ☐ | Non-profit Organizational Personnel | ☐ |
| Diplomatic Personnel | ☐ | Civic Organization Personnel | ☐ |
| Foreign Service Personnel | ☐ | Research Assistants | ☐ |
| Research Personnel | ☐ | Poll and Survey Workers | ☐ |
| Field Service Personnel | ☐ | Other (specify) | ☐ |

EDUCATION AND TRAINING

Record an "X" to indicate education or training required.

- | | | | |
|---|--------------------------|--|--------------------------|
| Agricultural Economics | ☐ | Market Research Analysis | ☐ |
| Business Economics | ☐ | Operations Research | ☐ |
| Business Economics and Statistics | ☐ | Operations Research and Statistics | ☐ |
| Economics | ☐ | Political Science | ☐ |
| Econometrics | ☐ | Diplomacy and World Affairs | ☐ |
| Business Statistics | ☐ | Government | ☐ |
| Financial Economics | ☐ | International Public Administration | ☐ |
| Government Economics | ☐ | International Relations | ☐ |
| Industrial Economics | ☐ | International Service | ☐ |
| International Economics | ☐ | Poli Science/International Relations | ☐ |
| Labor Economics | ☐ | Politics in International Relations | ☐ |
| Managerial Economics | ☐ | Other (specify) | ☐ |
| Economic Studies | ☐ | | |

DEGREE

Record an "X" to indicate degree.

- | | | | |
|-----------|--------------------------|-----------|--------------------------|
| BA | ☐ | MBE | ☐ |
| MA | ☐ | MS | ☐ |
| PhD | ☐ | MFS | ☐ |

SUBJECTS AND COURSES

Record an "X" to indicate subjects or courses that develop skills for the occupation.

- | | | | |
|---------------------------------|--------------------------|-----------------------------------|--------------------------|
| Economics: | | Microeconomic Theory | ☐ |
| Principles of Economics | ☐ | Money and Banking | ☐ |
| Fundamentals of Economics | ☐ | Government and Business | ☐ |
| Consumer Education | ☐ | Economics of Transportation | ☐ |

SUBJECTS AND COURSES—Continued

Public Utilities	☐	Economic Issues and Policies	☐
Agricultural Economics	☐	Public Finance and Taxation	☐
Regional Economics	☐	Public Expenditures	☐
Labor Economics	☐	Labor Legislation and Contracts	☐
Economics of Health	☐	International Economic Theory and Practice	☐
Public Finance	☐	Pure Theory of International Trade	☐
State and Local Finance	☐	Urban, Regional, and Resources Economics	☐
Development of American Economic Institutions	☐	Economics of the Communist Bloc	☐
Development of European Economic Institutions	☐	Problems of Underdeveloped Countries	☐
Economic Development	☐	Economic Development Planning	☐
Comparative Economic Systems	☐	Economics of Growth and Development	☐
International Economics	☐	Mathematical Economics and Statistics	☐
Economic Statistics	☐	National Income Accounts	☐
History of Economic Thought	☐	Econometrics	☐
Business Cycles	☐	Econometrics of Planning and Development	☐
Monetary and Fiscal Policy	☐	Economic Research	☐
Urban Economic Problems	☐	Other (specify)	☐
Labor and the Law	☐		
Development of the Labor Movement	☐	Political Science:	
Social Insurance	☐	Introduction to Political Thought	☐
Economics of Poverty	☐	American Political Thought	☐
International Trade and Finance	☐	Contemporary Political Ideologies	☐
Intermediate Income Price and Distribution Theory	☐	Asian Political Theory	☐
Taxation, Government Finance and Fiscal Policy	☐	Elements of Roman Jurisprudence	☐
State and Local Finance and Its Administration	☐	Constitution Development, Rights	☐
Money, Credit, and Banking	☐	Constitution Development, Power	☐
Personal Income, Expenditures, Savings and Investment	☐	Modern Legal Systems	☐
International Economic Principles, Problems, and Policies	☐	Jurisprudence	☐
International Economic Integration	☐	Introduction to International Politics	☐
Urban and Regional Economics	☐	Introduction to International Law	☐
Economics of Health and Human Resources	☐	International Organization and Administration	☐
Economic History of Western Civilization	☐	American Foreign Policy	☐
Comparative Economic Philosophies and Planning	☐	Foreign Policies of the Major Powers	☐
Communist Economic Organization and Development	☐	Soviet Foreign Policy	☐
Economics of Industrial Organization	☐	National Security Policies	☐
Economics of Less Developed Countries	☐	Governments of Western Europe	☐
Economic Fluctuations, Growth, and Forecasting	☐	Governments and Politics of Scandinavian Countries	☐
Economic Processes in the Rise and Fall of Civilizations	☐	Government and Policies of USSR	☐
Computer Applications in Economics	☐	Governments of Eastern Europe	☐
Introduction to Mathematical Economics and Econometrics	☐	Governments and Politics of the Far East	☐
Introduction to Macro and Micro Economic Theory	☐	Governments and Politics of Southeast Asia	☐
		Governments of South America	☐
		Inter-American Affairs	☐
		Governments and Politics in the Near and Middle East	☐
		Governments and Politics of Sub-Sahara Africa	☐

SUBJECTS AND COURSES—Continued

The Politics of Development	☐	Executives and Bureaucracies	☐
The American Government	☐	Public Policies	☐
The American Presidency	☐	American Diplomacy	☐
State Government	☐	European Diplomacy	☐
Urban and Regional Political Systems	☐	International Relations of Latin America	☐
American Local Government, Its Organization and Problems	☐	Africa in International Affairs	☐
Political Parties	☐	Soviet Foreign Policy	☐
Public Opinion	☐	World Communist Movements	☐
The Legislative Process	☐	Formulation of American Foreign Policy	☐
Political Behavior	☐	Military Strategy and Foreign Policy	☐
Introduction to Public Administration	☐	International Organization	☐
Public Organization and Management	☐	Theory and Methodology in International Relationships	☐
Administrative Justice and Lawmaking	☐	Science, Technology and Politics	☐
Public Personnel Administration	☐	International Communications Theory	☐
Public Financial Administration	☐	Economic Analysis for International Relations	☐
Local Planning Law and Administration	☐	International Systems Analysis	☐
Comparative Public Administration	☐	Foreign Policy Analysis	☐
Research Methods in Political Science	☐	Other (specify)	☐
Political Analysis	☐		
Theory Building in Political Science	☐		
Political Systems of Advanced Societies	☐		

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines and Equipment:

Computers	☐
Adding Machines	☐
Calculators	☐
Typewriters	☐
Other (specify)	☐

Balance of Trade Data	☐
Credit Data	☐
Interest Data	☐
Investment Data	☐
Tax Data	☐
Industrial Accident Data	☐
Other (specify)	☐

Work Aids:

Survey Data	☐
Geographical Data	☐
Census Data	☐
Labor Supply Data	☐
Research Data	☐
Sales Data	☐
Consumer Data	☐
Gross National Product Data	☐
Commodity Data	☐
Commodity Exchange Data	☐
Tariff Data	☐
Market Research Data	☐
Market Trend Data	☐
International Trade Data	☐
Statistical Data	☐
Operations Research Data	☐
Agricultural Data	☐
Intelligence Data	☐
Economic Forecast Data	☐

Laws:

Public Laws	☐
Labor Laws	☐
Industrial Accident Laws	☐
Tariffs	☐
Insurance Laws	☐
International Laws	☐
Social Insurance Laws	☐
Tax Laws	☐
Other (specify)	☐

Reports:

Consumer Reports	☐
Financial Statements	☐
Annual Reports	☐
Other (specify)	☐

International Trade Agreements:

Fiscal Policy	☐
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MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Tax Policy	☐	Credit Instruments	☐
Price Indexes	☐	Statistical Tables	☐
Foreign Policy	☐	Slide Rules	☐
Government Regulations	☐	Political Polls	☐
Surveys	☐	Other (specify)	☐
Opinion Polls	☐		

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial	☐	Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

ELECTRICAL EQUIPMENT, APPARATUS, AND DEVICES MANUFACTURING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with manufacturing of:

Electric power:

- Generators and components ☐
- Distribution transformers ☐
- Specialty transformers ☐
- Storage batteries ☐
- Wet cell ☐
- Dry cell ☐
- Switchgear ☐
- Switchboard apparatus ☐

Electric motors and motor components ☐

Electrical:

- Industrial apparatus and components ☐
- Industrial controls ☐
- Household appliances and housewares ☐
- Lighting and wiring products ☐
- Communication equipment ☐
- X-ray equipment ☐
- Equipment for internal combustion engines ☐
- Electromedical equipment ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

- Fabricating parts used in manufacturing of products ☐
- Assembling parts into subassemblies or final product ☐
- Installing electrical systems used for operating machines, machinery, and instruments ☐
- Inspecting parts, assemblies, and products ☐
- Testing assemblies and products ☐
- Calibrating or adjusting operation of products ☐
- Reworking defective or malfunctioning assemblies or products ☐
- Other (specify) ☐

Plans:

- Manpower requirements ☐
- Work schedules ☐
- Production schedules ☐
- Assembly procedures ☐
- Training of workers ☐
- Inspection procedures ☐
- Testing procedures ☐

Prepares work schedules ☐

Assigns workers to specific duties ☐

Gives work directions to workers concerning assigned duties ☐

WHAT THE WORKER DOES—Continued

Inspects work for conformance with specifications	☐	Sets up machine for operation by other workers	☐
Interprets production orders, specifications, drawings, and technical data for workers	☐	Sets up and operates machines	☐
Advises workers on methods and procedures for solving work problems	☐	Controls operation of automatic machines	☐
Enforces worker compliance with established work procedures, regulations and safety rules	☐	Controls equipment to process materials	☐
Evaluates worker performance	☐	Tends preset-up automatic machines	☐
Recommends personnel actions, such as promotions, discharges, and disciplinary actions	☐	Feeds materials into machines or equipment	☐
Requisitions materials, tools, and equipment	☐	Offbears parts or products from machines or conveyors	☐
Keeps production and worker performance records	☐	Other (specify)	☐
Prepares report on production activities	☐	Installs, aligns, and secures in machine or equipment:	
Trains workers in:		Die casting molds	☐
Setting up and operating machines and equipment	☐	Die sets	☐
Subassembly methods and procedures	☐	Rolls	☐
Final assembly methods and procedures	☐	Stops	☐
Inspection methods and procedures	☐	Guides	☐
Repair or rework on assemblies and products	☐	Holding fixtures	☐
Coordinates:		Cutters	☐
Department activities with activities of other departments	☐	Workpiece	☐
Worker activities	☐	Extrusion nozzles	☐
Other (specify)	☐	Spacers	☐
Reviews, reads, or analyzes:		Marking wheels	☐
Production specifications	☐	Revolving heads	☐
Production orders	☐	Take up reels	☐
Assembly specifications	☐	Coils or rolls of material	☐
Blueprints	☐	Welding electrodes	☐
Inspection reports	☐	Other (specify)	☐
Testing reports	☐	Threads material through:	
Rework orders	☐	Rollers	☐
Other (specify)	☐	Guides	☐
Determines:		Hold downs	☐
Material requirements	☐	Fabricating unit	☐
Parts requirements	☐	Forming unit	☐
Machine setups	☐	Other (specify)	☐
Jigs, fixtures, and holding devices required	☐	Sets controls for specified:	
Subassembly methods and procedures	☐	Temperature	☐
Final assembly methods and procedures	☐	Pressure	☐
Inspection requirements	☐	Vacuum	☐
Testing requirements	☐	Timing cycle	☐
Other (specify)	☐	Flow rates	☐
		Machine fabricating operations	☐
		Product forming operations	☐
		Product processing operations	☐
		Other (specify)	☐
		Performs trial run on machine to verify setup	☐
		Moves levers and controls to:	
		Start machine or equipment	☐

WHAT THE WORKER DOES—Continued

- Maintain specified tension on materials ☐
- Reset guides, stops, or tool position ☐
- Adjust operation of machine or equipment ☐
- Fabricate product or part ☐
- Process product or part ☐
- Stop machine or equipment ☐
- Other (specify) ☐
- Observes:
 - Machine or equipment operation ☐
 - Panelboard readings ☐
 - Gages and meters ☐
 - Products produced for defects ☐
 - Action of electrical products tested ☐
 - Other (specify) ☐
- Fabricates parts or products, using hand or power tools and measuring instruments ☐
- Lays out:
 - Reference lines or points ☐
 - Material cutting lines ☐
 - Locations for drilling holes ☐
 - Wiring pattern ☐
 - Wiring diagram ☐
 - Other (specify) ☐
- Drills, reams, or taps holes for mounting or assembly of:
 - Components of products ☐
 - Subassemblies ☐
 - Controls ☐
 - Gages ☐
 - Meters ☐
 - Instruments ☐
 - Panelboards ☐
 - Switchboards ☐
 - Other (specify) ☐
- Assembles parts, assemblies, or final product by:
 - Placing part in holding device or fixture ☐
 - Fitting parts together ☐
 - Setting clearances specified between parts ☐
 - Pressing bushings, pinions, or couplings on shafts ☐
 - Shrinking bushings on shaft, using heat ☐
 - Aligning parts ☐
 - Fastening or securing parts or assemblies in place using:
 - Screws ☐

- Pins ☐
- Bolts and nuts ☐
- Rivets ☐
- Clamps ☐
- Hangers ☐
- Cotter keys ☐
- Welds ☐
- Soldering iron or gun ☐
- Brazes ☐
- Plastic compound ☐
- Other (specify) ☐
- Cutting:
 - Insulating materials to specific size ☐
 - Wire to specified lengths ☐
 - Tubing or piping to specified lengths ☐
 - Other (specify) ☐
- Inserting:
 - Insulating material between:
 - Commutator slots ☐
 - Plates of storage batteries ☐
 - Appliance panels ☐
 - Wires into terminals or connectors ☐
 - Plates in cases of storage batteries ☐
 - Other (specify) ☐
- Bending:
 - Contacts or points into specified position ☐
 - Parts to prevent short circuits between electrical parts ☐
 - Tubing into specified contour for installation ☐
 - Structural parts of appliances to obtain specified alignment and fit ☐
 - Armatures to obtain specified straightness ☐
- Fitting:
 - Carbon brushes to curve of commutator ☐
 - Stator coils to housing ☐
 - Bearings to shafts or journals ☐
 - Other (specify) ☐
- Stripping insulating material from wiring ☐
- Wrapping insulating material around coils ☐
- Dipping products into materials to seal or cover them ☐
- Connecting:
 - Wiring to specified:
 - Controls ☐
 - Terminals ☐
 - Switches ☐
 - Assemblies ☐

WHAT THE WORKER DOES—Continued

Timers	☐	Readings on product under test	☐
Panelboards	☐	Action of assembly or product for	☐
Switchboards	☐	specified performance	☐
Switching gear	☐	Gages and meters for electrical	☐
Leads to battery terminals	☐	characteristics	☐
Piping or tubing specified to	☐	Evidences of malfunctioning	☐
pumps or inlets	☐	Analyzing test data to determine	☐
Electrical assemblies or products to	☐	cause of malfunction	☐
testing equipment	☐	Recording nature and type of defects	☐
Other (specify)	☐	in log	☐
		Other (specify)	☐
Packing grease cups	☐	Calibrates products by:	
Lubricating bearings	☐	Adjusting calibration screws	☐
Wrapping wire around mica to form	☐	Resetting tensions on springs	☐
heating coils	☐	Resetting temperature indicators	☐
Placing and securing plates or housings	☐	Bending electrical contacts for	☐
on products	☐	specified clearances	☐
Other (specify)	☐	Other (specify)	☐
Inspects:		Prepares orders for reworking:	
Materials or products for:		Parts having surface defects	☐
Surface defects	☐	Malfunctioning assemblies or products	☐
Coating defects	☐	Parts not meeting dimensional	☐
Assemblies for:		specifications	☐
Quality of workmanship	☐	Other (specify)	☐
Completeness and accuracy of	☐		
assembly	☐	Reworks:	
Fit and relationship of parts	☐	Parts to remove defects by:	
Loose and broken connections	☐	Filing	☐
Alinement of parts	☐	Grinding	☐
Conformance with sample assembly	☐	Scraping	☐
Binding of moving parts	☐	Lapping	☐
Other (specify)	☐	Truing	☐
		Straightening	☐
Measures:		Rewiring parts	☐
Materials or products for conformance with	☐	Securing loose connections	☐
dimensional specifications	☐	Assemblies and products by:	
Plating or coating thicknesses on	☐	Disassembling unit or product	☐
materials and parts	☐	Examining parts, connections, and	☐
Clearances between moving parts of	☐	assembly for defect	☐
electrical contacts	☐	Measuring clearances between parts	☐
Other (specify)	☐	or contacts	☐
Tests part, assembly, or product by:		Removing and replacing defective	☐
Setting controls for specified:		parts	☐
Temperature	☐	Soldering loose connections	☐
Current or voltage	☐	Reassembling unit or product	☐
Starting test equipment and observing:		Other (specify)	☐
Readings on gages of testing equipment	☐		

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Management	☐	Inspection Personnel	☐
Engineering Personnel	☐	Testing Personnel	☐

WHAT THE WORKER DOES—Continued

Supervisors	☐	Helpers	☐
Other Supervisors	☐	Assembly Line Personnel	☐
Workers	☐	Other (specify)	☐

EDUCATION AND TRAINING

Record an "X" to indicate education or training requirements.

Elementary	☐	Vocational School	☐
High School	☐	Military Training	☐
Junior College	☐	On-the-job Training	☐
Technical School	☐	Other (specify)	☐

SUBJECTS AND COURSES

Record an "X" to indicate subjects or courses that develop a worker's skills.

Mathematics	☐	Storage Cells	☐
Applied Physics	☐	Batteries	☐
Algebra	☐	Rectified AC Power Supply	☐
Care and Use of Hand Tools	☐	DC Circuit Analysis:	
Care and Use of Power Tools	☐	Kirchoff's Law	☐
Basic Electricity	☐	Application to Series Circuits	☐
Component Recognition:		Application to Parallel Circuits	☐
Physical Appearance	☐	Application to Series-Parallel Circuits	☐
Schematic Symbolization	☐	DC Machinery:	
Prefixes Used for Electrical Units	☐	DC Motors:	
Electrical Measuring Devices:		Series Wound	☐
Ammeter	☐	Shunt Wound	☐
Voltmeter	☐	Compound Wound	☐
Ohmmeter	☐	Universal Wound	☐
Multimeter	☐	DC Generators:	
Protective Devices:		Series	☐
Fuses	☐	Shunt	☐
Circuit Breakers	☐	Compound	☐
Overload Relays	☐	Armature Construction	☐
Interlock Switches	☐	Field Testing	☐
Electrical Resistance	☐	Introduction to AC Current:	
Ohm's Law	☐	Instantaneous Value of AC	☐
Electrical Circuits:		Peak, Average, and Effective Value	
Series	☐	of AC	☐
Parallel	☐	Phase Relationship to Voltage and Current	☐
Series-Parallel Combination	☐	Inductance, Reactance and Impedance:	
Types of Magnets	☐	Fundamentals of Inductance	☐
Magnetic Force	☐	Voltage and Current Relationship	☐
Magnetic Fields	☐	Series Inductance-Resistance	
Shapes and Uses of Magnets	☐	Relationship	☐
Electromagnetism:		Parallel Inductance-Resistance	
Magnetic Field Around Conductor	☐	Relationship	☐
Left Hand Rule	☐	Effect of Frequency Changes on Reactance	☐
Field Between Two Conductors	☐	Capacitive Reactance and Impedance	☐
Magnetic Circuits	☐	Fundamentals of Capacitance:	
Induction	☐	Voltage and Current Relationship	☐
Power Sources:		Series and Parallel RC Circuits	☐
Dry Cells	☐		

SUBJECTS AND COURSES—Continued

AC Circuits:

- Series RLC Circuits ☐
- Parallel RLC Circuits ☐
- Power in AC Circuits ☐

Transformer Theory and Application:

- Theory of Transformer Actions ☐
- Turns Ratio ☐
- Impedance Matching ☐
- Transformer Losses ☐
- Transformer Ratings ☐
- Power Transformers ☐
- Instrument Transformers ☐
- Specialty Transformers ☐

- Principles of AC Machinery ☐
- Principles of AC Generators ☐
- Principles of Induction Motors ☐
- Principles of Synchronous Motors ☐
- Principles of Single Phase Motors ☐
- Principles of Polyphase Motors ☐
- General Safety Precautions ☐
- Tools for Drilling, Tapping, Punching ☐
- Wire Connectors and Fasteners ☐
- Stripping, Splicing, and Soldering ☐
- Wires and Connectors ☐
- Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines:

- Armature banding machines ☐
- Armature winding machines ☐
- Battery acid dumping machines ☐
- Battery acid bottling machines ☐
- Capping machines ☐
- Casting machines ☐
- Cell tube forming machines ☐
- Clinching machines ☐
- Coil taping machines ☐
- Coil winding machines ☐
- Conveyors ☐
- Core insulating machines ☐
- Coremaking machines ☐
- Crushers ☐
- Die casting machines ☐
- Drill presses ☐
- Dry cell battery machines ☐
- Electrode cleaning machines ☐
- Filling machines ☐
- Gettering filament machines ☐
- Lathes ☐
- Lamination stacking machines ☐
- Lead burning machines ☐
- Light bulb forming machines ☐
- Mixing machines ☐
- Mills ☐
- Pasting machines ☐
- Plate stacking machines ☐
- Plug wiring machines ☐
- Screening and blending machines ☐
- Spun paste machines ☐
- Spraying machines ☐
- Undercut saw machines ☐
- Wire stranding machines ☐
- Wire twisting machines ☐
- Wrapping machines ☐
- Other (specify) ☐

Tools:

- Wrenches ☐
- Screwdrivers ☐
- Files ☐
- Pliers ☐
- Diagonals ☐
- Wire hooks ☐
- Picks ☐
- Scribers ☐
- Wirecutters ☐
- Scissors ☐
- Hammers ☐
- Brushes ☐
- Wirestrippers ☐
- Tube benders ☐
- Pipe wrenches ☐
- Soldering iron ☐
- Soldering gun ☐
- Leather mauls ☐
- Acetylene torch ☐
- Crimping tools ☐
- Staking tools ☐
- Tweezers ☐
- Flaring tools ☐
- Scrapers ☐
- Other (specify) ☐

Equipment:

- Heat treating ☐
- Tempering ☐
- Annealing ☐
- Ovens ☐
- Furnaces ☐
- Driers ☐
- Scales ☐
- Welding equipment ☐
- Encapsulating equipment ☐
- Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Work aids:

Measuring devices:

Balance gage	☐
Dial indicator	☐
Feeler gage	☐
Thickness gage	☐
Thread gage	☐
Gage blocks	☐
Micrometers	☐
Straight edges	☐
Depth gages	☐
Shadowgraph	☐
Meters:	
Potentiometers	☐
Manometer	☐
Frequency meter	☐
Ammeter	☐
Voltmeter	☐
Multimeter	☐
Thermometer	☐
Hydrometer	☐
Other (specify)	☐
Loupes	☐
Oscilloscopes	☐
Oscillographs	☐
Electrical test stands	☐
Bridge gages	☐

Calibrating equipment	☐
Magnifying glasses	☐
Binocular microscopes	☐
Material testing equipment	☐
Other (specify)	☐
Acceptance slips	☐
Approval slips	☐
Rejection slips	☐
Blueprints	☐
Engineering drawings	☐
Wiring harness boards	☐
Inspection orders	☐
Inspection reports	☐
Production orders	☐
Production reports	☐
Formulas	☐
Assembly specifications	☐
Sample assemblies	☐
Holding devices	☐
Fixtures	☐
Jigs	☐
Schedules	☐
Calibration standards	☐
Salvage reports	☐
Rework orders	☐
Other (specify)	☐

PRODUCTS

Record an "X" to indicate electrical equipment, apparatus, or devices manufactured.

Electric Motors and Generators:

Armatures	☐
Coils	☐
Collector rings	☐
Converters:	
Frequency	☐
Phase	☐
Rotary	☐
Dynamotors	☐
Dynamos	☐
Exciter assemblies	☐
Generating apparatus and parts	☐
Generator sets:	
Gasoline	☐
Diesel	☐
Dual fuel	☐
Inverters	☐
Motors	☐
Power generators	☐
Railway motors and control equipment	☐
Resolvers	☐
Rotor retainers and housings	☐

Rotors	☐
Servo motors	☐
Slip rings	☐
Starters	☐
Synchronous condensers and timing motors	☐
Synchros	☐
Torque motors	☐
Other (specify)	☐

Transmission and Distribution

Equipment:

Power, Distribution, and Specialty:

Transformers	☐
Autotransformers	☐
Control transformers	☐
Distribution transformers	☐
Electric furnace transformers	☐
Feeder voltage regulators and boosters	☐
Generator voltage regulators:	
Electric induction type	☐
Step type	☐

PRODUCTS—Continued

Ignition transformers	☐	Lighting carbons	☐
Instrument transformers	☐	Fuel cells (electro-chemical generator)	☐
Lighting transformers	☐	Industrial controls:	
Line voltage regulators	☐	Armature relays	☐
Luminous tube transformers	☐	Electromagnetic:	
Machine tool transformers	☐	Brakes	☐
Ratio transformers	☐	Clutches	☐
Rectifier transformers	☐	Motor controls	☐
Regulators:		Positioning controls	☐
Transmission voltage regulators	☐	Relays	☐
Distribution voltage regulators	☐	Solenoid switches	☐
Signalling transformers	☐	Timing apparatus	☐
Toy transformers	☐	Industrial electric truck controls	☐
Tripping transformers	☐	Inverters (non-rotating)	☐
Voltage regulating transformers	☐	Mercury arc rectifiers	☐
Other (specify)	☐	Power converters (AC to DC)	☐
Switchgear and switchboard apparatus:		Static type	☐
Busbar structures	☐	Electric type	☐
Circuit breakers:		Rectifiers	☐
Air	☐	Series capacitors	☐
Power	☐	Static elimination equipment	☐
Control panels	☐	Thermo-electric generators	☐
Distribution boards	☐	Welding Equipment and Apparatus:	
Distribution cutouts	☐	Arc welders	☐
Fuse clips and blocks	☐	Arc welding generators	☐
Fuse devices (600 volts and over)	☐	Electrode holders	☐
Fuse mountings	☐	Electrodes	☐
Fuses	☐	Resistance welders	☐
Generator control and metering panels	☐	Seam welding apparatus	☐
Knife switches	☐	Spot welding apparatus	☐
Metering panels	☐	Other (specify)	☐
Panelboards	☐	Household Appliances:	
Power connectors	☐	Electrical cooking equipment	☐
Power switching equipment	☐	Dishwashers	☐
Time switches	☐	Floor waxers and polishers	☐
Other (specify)	☐	Freezers:	
Electrical Industrial Equipment-Apparatus:		Home	☐
Battery chargers	☐	Farm	☐
Blasting machines	☐	Garbage disposals	☐
Capacitors	☐	Refrigerators	☐
Condensers:		Sewing machines	☐
Fixed	☐	Vacuum cleaners	☐
Variable	☐	Water heaters	☐
Motor	☐	Laundry appliances:	
Generator	☐	Driers	☐
Carbon and graphite products:		Ironers	☐
Brush blocks	☐	Washing machines	☐
Brushes and brush block contacts	☐	Trash compactors	☐
Electrical carbon specialties	☐	Other (specify)	☐
Electric carbons	☐	Electrical Housewares and Fans:	
Electrodes:		Blenders	☐
Thermal electrodes	☐	Broilers	☐
Electrolytic electrodes	☐	Casseroles	☐
		Chafing dishes	☐

PRODUCTS—Continued

Coffee makers ☐
 Corn poppers ☐
 Dehumidifiers ☐
 Electric blankets ☐
 Fans:
 Ventilating fans ☐
 Exhaust fans ☐
 Circulating fans ☐
 Food mixers ☐
 Griddles ☐
 Grills ☐
 Heating pads ☐
 Hot plates ☐
 Juice extractors ☐
 Knives ☐
 Roasters ☐
 Teakettles ☐
 Vaporizers ☐
 Waffle irons ☐
 Other (specify) ☐

Electric Lighting and Wiring Equipment:

Electric lamps:
 Electric light bulbs ☐
 Electrotherapeutic lamps ☐
 Flash bulbs ☐
 Glow lamps ☐
 Photoflash and photoflood lamps ☐
 Sealed beam lamps ☐
 Strobotrons ☐

Current carrying devices:

Bus bars ☐
 Caps and plugs ☐
 Connectors ☐
 Contacts ☐
 Cutouts ☐
 Circuit breakers ☐
 Fluorescent starters ☐
 Lightning arrestors ☐
 Plugs ☐
 Sockets ☐
 Switches:
 Snap ☐
 Mercury ☐

Other (specify) ☐

Communication Equipment-Apparatus:

Carrier equipment ☐
 Communication headgear ☐
 Data sets ☐
 Electronic secretary ☐
 PBX equipment ☐
 Telegraph station equipment ☐
 Telegraph office switching equipment ☐
 Telephone central office equipment ☐
 Telephone sets ☐
 Telephone station equipment ☐
 Teletypewriters ☐
 Telewriters ☐
 Other (specify) ☐

X-ray Equipment:

Fluoroscopic ☐
 Radiographic ☐
 Therapeutic ☐
 X-ray tubes ☐
 Other (specify) ☐

Electromedical Equipment:

Electrocardiographs ☐
 Electroencephalographs ☐
 Electrotherapeutic apparatus ☐
 Other (specify) ☐

Electrical Equipment for Internal Combustion

Engines:
 Alternators ☐
 Automobile ☐
 Armatures ☐
 Coils ☐
 Distributors ☐
 Generators ☐
 Ignition systems ☐
 Ignition cable sets ☐
 Starters ☐
 Voltage regulators ☐
 Lighting systems ☐
 Other (specify) ☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture ☐
 Commercial:
 Business Service ☐
 Food and Beverage ☐
 Lodging Service ☐
 Personal Service ☐

Printing and Publishing ☐
 Repair Service ☐
 Sales ☐
 Communications ☐
 Conservation ☐
 Construction ☐

ENVIRONMENTAL SETTING—Continued

Correctional	☐	Medical Service	☐
Educational	☐	Military	☐
Entertainment	☐	Nonprofit	☐
Exhibition Center	☐	Office Service	☐
Financial	☐	Recreation	☐
Government Service	☐	Social Service	☐
Industrial	☐	Subsurface and Space	☐
Insurance	☐	Transportation	☐
Legal	☐	Utilities	☐
Library	☐	Other (specify)	☐

ELECTRONIC COMPONENTS, EQUIPMENT, AND APPARATUS MANUFACTURING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with manufacturing electronic:

- Communication equipment ☐
- Components and accessories ☐
- Detection or navigational equipment ☐
- Entertainment equipment ☐
- High energy equipment ☐
- Industrial equipment ☐
- Missile and space vehicle control equipment ☐
- Multi-purpose equipment ☐
- Semi-conductors and related devices ☐
- Signaling equipment ☐
- Television and radio equipment ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

Fabricating:

- Prototype or developmental electronic components ☐
- Components for use in electronic equipment ☐

Processing components or products

☐

Assembling:

- Electronic components ☐
- Electronic components into subassemblies ☐
- Electronic subassemblies into final product ☐

Installing assemblies and hardware in chassis and packages

☐

Inspecting components, assemblies, and products

☐

Testing components, assemblies, and products

☐

Calibrating components, assemblies, and products

☐

Reworking defective components, assemblies, or products

☐

Other (specify)

☐

Plans:

Manpower requirements

☐

Work schedules

☐

Production schedules

☐

Inspection schedules, methods, and procedures

☐

Testing schedules, methods, and procedures

☐

Assembly schedules, methods, and procedures

☐

Worker training requirements

☐

Prepares work schedules

☐

Assigns workers specific duties

☐

Gives work directions to workers concerning assigned duties

☐

Inspects work for conformance with specifications

☐

WHAT THE WORKER DOES—Continued

Interprets production orders, specifications, drawings, and technical data for workers	☐	Inspection sequences and procedures	☐
Advises workers on methods and procedures for solving work problems	☐	Testing sequences and procedures	☐
Evaluates performance of workers	☐	Machine and equipment requirements	☐
Recommends:		Other (specify)	☐
Changes and modifications in processes, fabrication, and assembly activities	☐	Sets up machines or equipment for other workers	☐
Personnel actions, such as promotions, discharges, and disciplinary actions	☐	Sets up and operates machines or equipment	☐
Acquisition of tools, machinery, and equipment	☐	Controls operation of automatic machines or equipment	☐
Requisitions materials, tools, and equipment	☐	Controls processing equipment	☐
Prepares reports on:		Tends preset machines or equipment	☐
Production activities	☐	Feeds machines or equipment	☐
Testing activities	☐	Offbears materials, components, or products from automatic machines	☐
Inspection activities	☐	Other (specify)	☐
Trains workers in:		Installs, aligns, and secures in machines or equipment:	
Setting up and operating machines and equipment to fabricate components	☐	Die sets	☐
Controlling equipment to process components	☐	Rolls	☐
Assembly methods, techniques and procedures	☐	Stops	☐
Inspection methods and procedures	☐	Guides	☐
Testing methods and procedures	☐	Workpiece	☐
Reworking defective components, assemblies, and products	☐	Coil winding arbor or mandrel	☐
Coordinates:		Welding electrodes	☐
Department activities with activities of other departments	☐	Other (specify)	☐
Flow of material, components, and assemblies among work stations	☐	Threads material through:	
Worker activities	☐	Rollers	☐
Other (specify)	☐	Guides	☐
Reviews, reads, or analyzes:		Holddowns	☐
Product specifications	☐	Tension devices	☐
Production orders	☐	Fabricating unit	☐
Assembly specifications	☐	Forming unit	☐
Blueprints	☐	Processing unit	☐
Sample assemblies	☐	Other (specify)	☐
Inspection reports	☐	Sets controls for specified:	
Test reports	☐	Temperature	☐
Rework orders	☐	Pressure	☐
Other (specify)	☐	Vacuum	☐
Determines:		Timing cycle	☐
Material requirements	☐	Voltage	☐
Components or assemblies required	☐	Current	☐
Machine and equipment setup	☐	Fabricating operation	☐
Holding fixtures, jigs, and devices required	☐	Forming operation	☐
Assembly sequences and procedures	☐	Processing operation	☐
		Testing operation	☐
		Other (specify)	☐
		Moves controls to:	
		Start machine or equipment	☐
		Begin fabricating operations	☐
		Begin processing operations	☐
		Reset guides, stops or tension devices	☐

WHAT THE WORKER DOES—Continued

Adjust operation for obtaining specified performance	☐	Screws	☐
Stop machine or equipment	☐	Solder	☐
Other (specify)	☐	Epoxy materials	☐
Observes:		Thermo-compression bonding	☐
Performance of machine or equipment for evidences of malfunctioning	☐	Brazes	☐
Gages	☐	Welds	☐
Meters	☐	Examines workpiece for defective fastening	☐
Recording indicators	☐	Discards or routes defective components, assemblies, or products for rework or salvage	☐
Other (specify)	☐	Routes acceptable components, assemblies, or products for inspection or testing	☐
Fabricates, by hand, components used in electronic products	☐	Other (specify)	☐
Selects type and size of material specified for component	☐	Installs and secures:	
Attaches end of wire to magnetic core, mandrel, or arbor	☐	Components in chassis	☐
Winds wire specified number of turns around core, mandrel, or arbor	☐	Glass plate and picture mask on cabinet	☐
Removes wound coil from mandrel or arbor	☐	Assemblies in product chassis, shell, or package	☐
Examines coil for:		Hardware and accessories to finish assembly of product	☐
Bends	☐	Wiring harness	☐
Kinks	☐	Other (specify)	☐
Cracks in coating	☐	Computes:	
Concentricity	☐	Variation in length of wire to obtain specified resistance	☐
Spacing	☐	Trimming required on component to obtain specified resistance	☐
Straightens coil or turns of wire on core	☐	Size of wire required for obtaining specified resistance	☐
Cuts wire to obtain coil of specified length	☐	Differences in weight of coated and uncoated components	☐
Wraps insulating material around core and winds next layer of wire on material	☐	Other (specify)	☐
Brushes epoxy or cement on coil and wraps tape over cement	☐	Inspects components, assemblies, or products for:	
Measures coil thickness for conformance with specifications	☐	Defective workmanship	☐
Other (specify)	☐	Conformance with assembly specifications	☐
Assembles components, assemblies, or products:		Surface defects	☐
Obtains materials specified for assembly	☐	Loose or broken parts, connections, or wiring	☐
Positions component or assembly in holding fixture, jig, or device	☐	Quality of coating or plating	☐
Fits components together following assembly specifications, diagram, or sample part	☐	Other (specify)	☐
Insures that component or assembly meets specifications for:		Measure:	
Alignment	☐	Thickness of coating or plating on materials or components	☐
Concentricity	☐	Components for conformance with dimensional specifications	☐
Clearance between parts	☐	Clearances between components	☐
Straightens, re-aligns, or bends components to meet specifications	☐	Other (specify)	☐
Fastens components or assembly in place, using	☐		
Nuts	☐		
Bolts	☐		

WHAT THE WORKER DOES—Continued

Tests components, assemblies, or products for:

- Continuity of circuitry ☐
- Specified voltage ☐
- Specified current ☐
- Electrical characteristics ☐
- Simulated operating parameters ☐
- Overload or over voltage conditions ☐
- Leakage ☐
- Gas ☐
- Shorts ☐
- Grading products according to test results ☐
- Conformance with operational specifications ☐
- Other (specify) ☐

Calibrates components or products by:

- Adjusting tuning circuits to obtain maximum signal response ☐
- Tuning receivers to obtain specified picture ☐
- Adding or cutting material from component to obtain specified resistance ☐
- Abrading material to obtain specified frequency ☐
- Other (specify) ☐

Reworks components, assemblies, and products:

- Disassembles defective unit ☐
- Replaces defective component ☐
- Reassembles unit ☐
- Routes unit for testing ☐
- Record nature of defect and repairs performed ☐
- Other (specify) ☐

- Ages tubes to stabilize electrical characteristics ☐
- Exhausts tubes to remove gases and other foreign matter ☐
- Etches circuit boards ☐
- Electroplates materials and products ☐
- Heats components in furnace to:
 - Remove moisture and impurities ☐
 - Sinter fire metalized coatings ☐
 - Braze parts together ☐
 - Anneal parts ☐
- Prepares solutions for cleaning, etching, and electroplating ☐
- Other (specify) ☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

- | | |
|--|--|
| Management ☐ | Workers ☐ |
| Supervisors ☐ | Technicians ☐ |
| Quality Control Personnel ☐ | Other (specify) ☐ |
| Engineering Personnel ☐ | |

EDUCATION AND TRAINING

Record an "X" to indicate education and training requirements.

- | | |
|---|--|
| Elementary ☐ | Military School ☐ |
| High School ☐ | On-the-job Training ☐ |
| Junior College ☐ | Other (specify) ☐ |
| Technical School ☐ | |

SUBJECTS AND COURSES

Record an "X" to indicate subjects and courses that develop a worker's skills.

Trade related subjects:

- Mathematics ☐
- Applied Physics ☐
- Algebra ☐
- Trigonometry ☐
- Care and Use of Handtools ☐
- Care and Use of Power Tools ☐

- Care and Use of Measuring Devices ☐
- Care and Use of Testing Equipment ☐
- Basic Electricity ☐
- Component Recognition ☐
- Physical Appearance ☐
- Schematic Symbolization ☐
- Electrical Measuring Devices ☐

SUBJECTS AND COURSES—Continued

Protective Devices	☐	Integrated Circuitry	☐
Electrical Resistance	☐	Communications	☐
Ohm's Law	☐	Radar Equipment	☐
Electrical Circuits	☐	IFF Equipment	☐
Types of Magnets	☐	Electronic Countermeasures	☐
Magnetic Force	☐	Electronic Test Equipment	☐
Magnetic Field	☐	Sonar Systems	☐
Shapes and Uses of Magnets	☐	Radar Systems	☐
Electromagnetism	☐	Radar Power Supplies	☐
Electrostatics	☐	Radar Receivers	☐
Inductance	☐	Radar Transmitters	☐
Capacitance	☐	Radar Antennas and Transmission Lines	☐
Network Analysis	☐	Servo Mechanisms	☐
Circuits and Resonance	☐	Transducers	☐
Science, Matter, and Measurement	☐	Scanning Switches	☐
Sound Energy	☐	Pre-amplifiers and Amplifiers	☐
Light Energy	☐	Sonar Indicators	☐
Other (specify)	☐	Communication Receivers	☐
Electronics:		Receiver Converter Equipment	☐
Transformer Principles	☐	Communication Transmitters	☐
Electron Emission	☐	Antenna Tuners, Couplers, and	
Diode Construction	☐	Multicouplers	☐
Diode Characteristics	☐	Planned Position Indicators	☐
Rectifier Circuits	☐	Interface Systems	☐
Filter Circuits	☐	Range Height Analysis	☐
Regulator Circuits	☐	Linear System Analysis	☐
Triode Characteristics	☐	Power Circuit Analysis	☐
Triode Amplifiers	☐	Microwaves	☐
Tetrode Amplifiers	☐	Network Synthesis	☐
Pentode Amplifiers	☐	Network Theory	☐
Paraphase Amplifier Circuits	☐	Computer Logic and Circuits	☐
Beam Power Amplifiers	☐	Feedback Control Systems	☐
Audio Power Amplifiers	☐	Industrial Electronics	☐
Decibels	☐	Electronic Amplifiers	☐
Microphones and Speakers	☐	Computer Design	☐
Oscillator Principles	☐	Lasers and Masers	☐
Oscillator Circuits and Application	☐	Wave Guides and Resonators	☐
Transmitters	☐	Linear Active Circuits	☐
Antennas and Wave Propagation	☐	Dielectrics	☐
Solid State Physics	☐	Semiconductor Devices	☐
Semiconductor Principles	☐	Theory of Semiconductors	☐
PN Junction Rectifiers	☐	Random Signals and Filter Theory	☐
Solid State Regulators	☐	Electron Tube Theory	☐
Two Junction Transistors	☐	Transistor Circuits	☐
		Other (specify)	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines:		Cleaning machine	☐
Aperture masking machine	☐	Coding machine	☐
Ball bonding machine	☐	Eutric bonding machine	☐
Base filling machine	☐	Grinders	☐
Bulb punch out machine	☐	Lapping machine	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Glass lathe	☐	Hydrogen furnaces	☐
Leak detector machine	☐	Diffusion furnaces	☐
Pin inserting machine	☐	Brazing equipment:	
Presses	☐	Radio frequency brazing equipment	☐
Drill presses	☐	Induction brazing equipment	☐
Punch presses	☐	Radio frequency aging equipment	☐
Arbor presses	☐	Generators:	
Resistor trimming machine	☐	Signal generators	☐
Spinning machine	☐	Power generators	☐
Spraying machine	☐	Tube bonding equipment	☐
Cathode spraying machine	☐	Etching equipment	☐
Pumps	☐	Balance scales	☐
Air pumps	☐	Photoengraving equipment	☐
Vacuum pumps	☐	Wave soldering equipment	☐
Vacuum metalizing machine	☐	Tube exhausting pumping equipment	☐
Tube flaring machine	☐	Digital frequency counters	☐
Stitch bonding machine	☐	Variable electronic filters	☐
Router	☐	Amplifiers	☐
Winding machine	☐	Temperature compensation chambers	☐
Coil winding machine	☐	Welders:	
Spade winding machine	☐	Helium welders	☐
Universal winding machine	☐	Resistance welders	☐
Other (specify)	☐	Tweezer welders	☐
Tools:		Encapsulating equipment	☐
Knives	☐	Other (specify)	☐
Spatulas	☐	Work aids:	
Medicine dropper	☐	Mechanical measuring devices:	
Soldering iron	☐	Go-no-go gage	☐
Soldering gun	☐	Micrometers	☐
Tweezers	☐	Calipers	☐
Brushes	☐	Dial indicators	☐
Chassis punches	☐	Millimeter scale	☐
Diagonal wire cutters	☐	Electrical measuring devices:	
Long nosed pliers	☐	Ohmmeters	☐
Nut drivers	☐	Voltmeters	☐
Screwdrivers	☐	Digital voltmeters	☐
Wrenches	☐	Ammeter	☐
Wire strippers	☐	Volt-ohmmeter	☐
Wire cutters	☐	Vacuum-tube-voltmeter	☐
Scissors	☐	Multimeter	☐
Picks	☐	Digital ohmmeter	☐
Files	☐	Inductance bridge gage	☐
Rivet gun	☐	Megger	☐
Tube nip-off gun	☐	Wave analyzer	☐
Vacuum quill	☐	Circuit analyzer	☐
Other (specify)	☐	Wave form analyzer	☐
Equipment:		Oscilloscopes	☐
Ovens	☐	Galvanometer	☐
Furnaces:		Synchroscope	☐
Annealing furnaces	☐	Wave meters	☐
Carbonizing furnaces	☐	Wheatstone bridge	☐
Lehrs	☐	Milliammeters	☐
Retort furnaces	☐	Optical instruments:	
		Optical comparator	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS -Continued

Optical pyrometer	☐	Schematics	☐
Microscope	☐	Test probes	☐
Optical interferometer	☐	Blueprints	☐
Binocular microscope	☐	Job loaders	☐
Toolmaker's microscope	☐	Rework orders	☐
Other (specify)	☐	Inspection reports	☐
Miscellaneous work aids:		Pictorial blueprints	☐
Templater	☐	Harness wiring boards	☐
Parts lists	☐	Black-light boxes	☐
Scale charts	☐	Procedure manuals	☐
Wiring diagrams	☐	Wire lists	☐
Product specifications	☐	Catalogs	☐
Testing schedules	☐	Color-code guides	☐
Sample parts	☐	Process sheets	☐
Sample assemblies	☐	Report forms	☐
Magnifying glasses	☐	Production reports	☐
Silk screens	☐	Production schedules	☐
Test data report forms	☐	Inspection criteria sheets	☐
Boats	☐	Quality assurance forms	☐
Engineering sketches	☐	Slide rules	☐
Topological drawings	☐	Tube data cards	☐
		Other (specify)	☐

PRODUCTS

Record an "X" to indicate component, equipment, or device produced.

Communications equipment:		Cartridges:	☐
Facsimile equipment	☐	Magnetic tape	☐
Intercommunications equipment	☐	Phonograph	☐
Laser systems and equipment	☐	Cavities microwave:	☐
Phototransmission equipment	☐	Oscillating	☐
Pulsed electron guns	☐	Amplifying	☐
Radio receiver networks	☐	Chokes	☐
Radio telegraph equipment	☐	Choppers	☐
Radio telephone equipment	☐	Chromotographs	☐
Other (specify)	☐	Circuit boards	☐
Components and accessories:	☐	Coils	☐
Absorbers	☐	Commutators	☐
Accelerators	☐	Comparators	☐
Actuators	☐	Condensers	☐
Adapters	☐	Connectors	☐
Alarms	☐	Consoles	☐
Amplifiers	☐	Constant impedance transformers	☐
Analyzers	☐	Controls	☐
Annunciators	☐	Converters	☐
Antennas	☐	Cooling units	☐
Attenuators	☐	Cores	☐
Baluns	☐	Couplers	☐
Boards	☐	Crystal assemblies	☐
Breadboards	☐	Crystals	☐
Cables	☐	Piezoelectric crystals	☐
Capacitors	☐	Decoders	☐

PRODUCTS—Continued

Delay lines:		Speaker monitors	☐
Heat emission detectors	☐	Speakers:	
Infra-red field detectors	☐	Electro dynamic	☐
Light emission detectors	☐	Electrostatic	☐
Magnetic field detectors	☐	Magnetic	☐
Ultra-violet-ray emission detectors	☐	Pillow stereo	☐
Door control devices:		Stereo earphones and accessories	☐
Radio	☐	Stereo sets	☐
Photoelectric cell	☐	Tape players	☐
Highway signals	☐	Tape recorders	☐
Light and heat operating units	☐	Television	☐
Loran equipment	☐	Home closed circuit system:	
Inertial guidance systems	☐	Recording system	☐
Radio direction finders	☐	Playback system	☐
Radio beacons	☐	Receiving sets	☐
Radio compasses	☐	Remote control devices	☐
Radiosondes	☐	Televisions	☐
Sonar equipment	☐	Tuners	☐
Avionic equipment	☐	Other (specify)	☐
Air traffic control systems	☐		
Other (specify)	☐	High energy equipment:	
Entertainment equipment:		Atom smashers	☐
Audio systems	☐	Betatrions	☐
Amplifiers:		Cyclotrons	☐
Musical instrument	☐	Linear accelerators	☐
Public address	☐	Particle accelerators	☐
High fidelity	☐	Other (specify)	☐
Antennas	☐		
Radio receiving:		Industrial equipment	☐
Automobile	☐	Electron beam:	
Portable	☐	Cutting machines	☐
Television/frequency modulated:		Forming machines	☐
Boosters	☐	Welding machines	☐
Distribution systems	☐	Precipitators	☐
Rotators	☐	Ultrasonic:	
Coin operated phonographs	☐	Amplifiers	☐
Home recorders:		Analyzers	☐
Cassette	☐	Cleaners	☐
Disc	☐	Flaw detectors	☐
Tape	☐	Generators	☐
Music operated:		Solderers	☐
Color systems	☐	Sterilizers	☐
Light displays	☐	Transducers	☐
Strobes	☐	Welders	☐
Music and paging systems	☐	Other (specify)	☐
Phonograph:		Demagnetizers	☐
Pick-up cartridges	☐	Demodulators	☐
Record cutting styli	☐	Demonstrators	☐
Replacement styli	☐	Detectors	☐
Turntables	☐	Diplexers	☐
Phonographs	☐	Discriminators	☐
Public address systems	☐	Displays	☐
Radio receiver sets	☐	Dividers	☐
Sound systems	☐	Duplexers	☐
Sound reproducing systems	☐	Echo boxes	☐

PRODUCTS—Continued

Enclosures ☐
 Encoders ☐
 Filters ☐
 Fuses ☐
 Gunn effect devices ☐
 Harness assemblies ☐
 Headers ☐
 Impedance induction units ☐
 Indicators ☐
 Induciors ☐
 Inverters ☐
 Keyers ☐
 Magnetic recording tape ☐
 Magnets ☐
 Mixers ☐
 Modulators ☐
 Modules ☐
 Networks ☐
 Oscillators ☐
 Passive repeaters ☐
 Plotters ☐
 Power supplies ☐
 Printed circuits ☐
 Protectors ☐
 Pulse forming networks ☐
 Reactors ☐
 Recorders ☐
 Reflectors ☐
 Relays ☐
 Repeaters ☐
 Resonant reed devices ☐
 Rings ☐
 Scanners ☐
 Seals ☐
 Servos ☐
 Shifters ☐
 Shunts ☐
 Solenoids ☐
 Speakers ☐
 Stabilizers, klystron ☐
 Switches ☐
 Switching matrixes ☐
 Switching systems ☐
 Synchronizers ☐
 Synchros ☐
 Tape decks ☐
 Tapes ☐
 Tees ☐
 Terminal systems ☐
 Terminals ☐
 Terminations ☐
 Thermistors ☐
 Transducers ☐
 Tube parts ☐
 Tubes:
 Cathode ray ☐

Ignition ☐
 Image transfer ☐
 Microwave:
 Backward wave ☐
 Crossed field ☐
 Klystron ☐
 Magnetron ☐
 Traveling wave ☐
 Noise source ☐
 Photo tubes ☐
 Power amplifying ☐
 Rectifying:
 Gas filled ☐
 Vacuum ☐
 Thyatron ☐
 Transmitting ☐
 X-ray ☐
 Tuners ☐
 Vacuum systems ☐
 Valves ☐
 Varistors ☐
 Vibrators ☐
 Voice controls ☐
 Wave guide assemblies ☐
 Wave guide structures ☐
 Other (specify) ☐

 Detection/Navigational equipment:
 Countermeasures equipment ☐
 Detection apparatus ☐
 Electronic field detectors ☐
 Missile and space control equipment:
 Missile control systems ☐
 Missile fuel management systems ☐
 Telemetry systems ☐
 Other (specify) ☐

 Multi-purpose equipment ☐
 Computers:
 Analog computers ☐
 Digital computers ☐
 Digital encoders ☐
 Cryogenic equipment ☐
 Magnetic analysis equipment ☐
 Oscilloscopes ☐
 Television closed circuit:
 Educational systems ☐
 Industrial systems ☐
 Medical systems ☐
 Monitor systems ☐
 Training devices:
 Flight simulators ☐
 Teaching machines ☐
 Weapon simulators ☐
 Other (specify) ☐

PRODUCTS—Continued

Semiconductors and related devices	☐	Strain gages	☐
Computer logic modules:		Thermionic devices	☐
Emitter followers	☐	Thermoelectric devices	☐
Flip flops	☐	Magnetohydrodynamic devices	☐
Gates	☐	Transistors	☐
Inverters	☐	Other (specify)	☐
Magnetic:		Signaling equipment:	
Shifts	☐	Control receivers	☐
Registers	☐	Fire alarm systems	☐
Registers	☐	Hydrophones	☐
Diodes:		Photographic control systems	☐
Parametric diodes	☐	Underwater sound systems	☐
Tunnel diodes	☐	Other (specify)	☐
Variable capacitance diodes	☐	Television and radio equipment:	
Zener diodes	☐	Control room equipment	☐
Hall effect devices	☐	Broadcasting equipment	☐
Solid state devices:		Instant replay equipment	☐
Controlled rectifiers	☐	Color television tape equipment:	
Diodes	☐	Recording equipment	☐
Fuel cells	☐	Reproducing equipment	☐
Infra-red sensors	☐	Monitoring equipment	☐
Light sensitive devices	☐	Kinescope equipment:	
Modules	☐	Recording equipment	☐
Monolithic integrated circuits	☐	Reproducing equipment	☐
Nuclear detectors	☐	Transceivers	☐
Photoelectric cells	☐	Transmitting equipment	☐
Photovoltaic devices	☐	Other (specify)	☐
Rectifiers	☐		
Semi-conductor networks	☐		
Integrated circuit transistors	☐		

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial	☐	Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

FABRICATED PLASTICS MANUFACTURING

Inventory

WHAT THE WORKER DOES

Below are listed activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates production activities concerned with:

- Manufacture of fabricated plastics products ☐
- Providing fabricated plastics components or products services on fee basis ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

- Setting up machines or equipment for fabricating plastics products ☐
- Setting up and operating plastics processing machines and equipment ☐
- Tending pre-setup plastics processing and fabricating machines ☐
- Hand-finishing plastics products ☐
- Laminating plastics to produce preforms of plastics products ☐
- Quality control of fabricated plastics components or products ☐
- Other (specify) ☐

Plans:

- Manpower requirements ☐
- Work schedules ☐
- Machine requirements ☐
- Production schedules ☐
- Production activities ☐
- Training for workers ☐
- Quality control procedures and practices ☐
- Other (specify) ☐

- Prepares work schedules ☐
- Assigns workers to duties ☐
- Gives workers directions for performing assigned duties ☐
- Interprets production orders, product specifications, and technical data for workers ☐
- Inspects products for conformance with manufacturing specifications ☐
- Enforces workers' compliance with work procedures, regulations, and safety rules ☐
- Evaluates worker performance ☐
- Advises workers on methods of solving work problems ☐
- Recommends personnel action on workers ☐
- Requisitions materials, tools, and work aids ☐
- Keeps production and worker performance records ☐
- Prepares reports on production activities ☐

Trains workers in:

- Performing assigned duties ☐
- Setup and operation of machines and equipment ☐
- Safety practices and regulations ☐

Coordinates:

- Department activities with activities of other departments ☐

WHAT THE WORKER DOES—Continued

Worker activities	☐	Dispensing of materials into molds	☐
Other (specify)	☐	Rotational speed	☐
Studies or analyzes:		Material dehumidifying temperature	☐
Production orders	☐	Machine fabricating sequences	☐
Product specifications	☐	Speed of plungers or screws	☐
Sketches, diagrams, or blueprints	☐	Vacuum	☐
Quality control reports	☐	Timing cycle of fabricating operations	☐
Other (specify)	☐	Other (specify)	☐
Plans:		Turns handwheels or moves controls to:	
Machine requirements	☐	Set length of hydraulic ram stroke	☐
Work sequences	☐	Rotational rewind speed	☐
Hand operations required	☐	Maintain specified tension or pull on	
Assembly procedures	☐	materials	☐
Machining requirements	☐	Adjust or regulate:	
Finishing requirements	☐	Vacuum	☐
Quality control procedures and methods	☐	Air pressure	☐
Other (specify)	☐	Sizing rings	☐
		Material feed speed	☐
Determines:		Synchronize post forming or pull off speed	
Setup of machines	☐	with machine operations	☐
Type of plastics materials to be used	☐	Feed tools onto workpiece	☐
Type of molding methods to be used	☐	Start or stop fabricating operations	☐
Temperatures, pressures, and speed to be		Start machine to obtain sample product	☐
used during production		Other (specify)	☐
Other (specify)	☐	Observes:	
Sets up automatic machines or machines for		Dials and gages for specified readings	☐
other workers	☐	Action of machine for evidences of	
Sets up and operates machines	☐	malfunctioning	☐
Operates or controls machine from panelboard		Other (specify)	☐
or console	☐	Examines molded or formed articles for	
Tends pre-setup or automatic machines	☐	defects, as:	
Assists worker in operating machines or		Blistering	☐
equipment	☐	Porosity	☐
Feeds materials into or offbears products from		Mold sticking	☐
machines	☐	Dull surface	☐
Other (specify)	☐	Orange peel	☐
Installs, aligns, and secures in machine:		Pitted surface	☐
Molds	☐	Clouded or segregated surface	☐
Cutting dies	☐	Dimpled surface	☐
Extrusion dies	☐	Warp	☐
Sizing rings	☐	Cracks	☐
Stops	☐	Burned marks	☐
Guides	☐	Thick flash	☐
Jigs or holding fixtures	☐	Other (specify)	☐
Other (specify)	☐	Measures article for conformance with	
Sets controls for specified:		dimensional specifications	☐
Mold temperature	☐	Tests articles for conformance with contract	
Preheating temperature	☐	specifications	☐
Pressure	☐	Lays out on material:	
Proportioning of materials	☐	Pattern outlines	☐
		Template outlines	☐

WHAT THE WORKER DOES—Continued

- | | |
|--|---|
| Cutting lines..... ☐ | Repairs and maintains plastics molding machines: |
| Other (specify) ☐ | Observes action of machine to detect malfunction..... ☐ |
| Lays up fiber-glass and resin coated fabrics for molding plastic products: | Listens to operation of machine to locate malfunctioning ☐ |
| Cleans mold or form with solvents..... ☐ | Disassembles machine or machine section and removes defective part ☐ |
| Sprays form or mold with parting agents ☐ | Repairs or replaces defective part and reassembles machine ☐ |
| Cuts material to specified size..... ☐ | Tests machine for specified operational performance ☐ |
| Spreads compound over form and positions fabric on it ☐ | Other (specify) ☐ |
| Rubs fabric with squeegee to remove air bubbles..... ☐ | Performs tasks of unskilled nature in plastics fabrication plant: |
| Applies additional layers of compound and fabric, as required ☐ | Removes molds from ovens ☐ |
| Trims edges of fabric and allows part to cure ☐ | Removes castings from molds ☐ |
| Removes laminated product from form or mold ☐ | Cleans molds ☐ |
| Other (specify) ☐ | Strips stamped, sealed, or cut plastic bodies from panels ☐ |
| Cast plastic articles: | Colors products with vinyl inks ☐ |
| Coats mold sections with parting agents ☐ | Fastens, glues, or cements parts of products together..... ☐ |
| Assembles and secures sections of mold ☐ | Attaches metal parts to plastics products ☐ |
| Pours plastics compound in mold ☐ | Other (specify) ☐ |
| Heats mold to cure article ☐ | |
| Removes cured article from mold ☐ | |
| Trims flash from article, using knife or power handtools ☐ | |
| Other (specify) ☐ | |

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

- | | |
|--|--|
| Management ☐ | Helpers ☐ |
| Supervisors ☐ | Quality Control Personnel ☐ |
| Other Supervisors ☐ | Maintenance Personnel ☐ |
| Workers ☐ | Other (specify) ☐ |

EDUCATION AND TRAINING

Record an "X" to indicate education and training required.

- | | |
|---|--|
| Elementary ☐ | Technical Training ☐ |
| High School ☐ | Vocational Training ☐ |
| Junior College ☐ | On-the-job Training ☐ |
| College ☐ | Other (specify) ☐ |

SUBJECTS AND COURSES

Record an "X" to indicate subjects and courses that develop worker skills.

- | | |
|--|--|
| Trade related subjects and courses: | Blueprint Reading ☐ |
| Applied Mathematics ☐ | Estimating ☐ |
| Basic Chemistry ☐ | Laboratory Procedures ☐ |
| Care and Use of Tools ☐ | Test Procedures ☐ |

WHAT THE WORKER DOES—Continued

Human Relations ☐
 Principles of Supervision ☐
 Other (specify) ☐

Plastics:

Introduction to Plastics:
 Survey of Field of Plastics ☐
 Trade Terminology ☐
 Origins, Development, and Future of
 Plastics ☐
 Principles of Polymerization ☐

General Principles of:
 Polymerization ☐
 Polycondensation ☐
 Polarity ☐
 Colloidal Properties ☐
 Crystallinity ☐
 Determination of:
 Molecular weights ☐
 Viscosity ☐

Applied Chemistry of Plastics Materials:
 Chemical Structure of Synthetic Resins ☐
 Nature of Plastics ☐
 Linear and Cross-Linked Plastics ☐

Sources of Basic Chemicals:
 Coal ☐
 Proteins ☐
 Petroleum and Petroleum Gases ☐
 Chemurgy ☐
 Natural Resins ☐

Synthetic Elastomers:
 Synthetic Rubbers ☐
 Isoprene ☐
 Styrene Monomers ☐
 Vinyl Acetylene ☐
 Vulcanization ☐

Comparison of Properties of:
 Butadiene Self Polymers ☐
 Butyl Rubber ☐
 Thioplasts ☐

Manufacture and Processing of Plastics of:
 Phenol-formaldehyde Molding Powders ☐
 Urea-formaldehyde Molding Powders ☐
 Polystyrene and Other Polymers ☐
 Cellulose Acetate ☐
 Cellulose Nitrate ☐
 Process of Thermal Polymerization ☐
 Emulsion Condensation ☐

Properties of Thermoplasts:
 Physical Properties ☐
 Flow Properties ☐
 Effect of Temperature on Physical
 Properties ☐
 Fatigue Resistance ☐
 Creep and Creep Recovery ☐

Effects of Solvents ☐
 Resistance to Marring ☐
 Related Properties ☐

Properties of Thermosets:
 Properties of Basic Thermosetting
 Materials ☐
 Aspects of Fillers on Properties ☐
 Effects of Cure ☐
 Plasticity of Molding Procedures ☐
 Strength-Weight Ratios ☐

Dies and Molds:
 Design of Molds ☐
 Types of Materials for Molds ☐
 Types of Molds ☐
 Production of Molds ☐
 Hobbing ☐
 Electric deposition or Electro-forming
 of Molds ☐

Shop Production Procedures:
 Requirements of Shop Setup ☐
 Hydraulic Supply Systems ☐
 Hydraulic Presses ☐
 Injection and Extrusion Presses ☐
 Preparation of Materials ☐
 Injection Molding ☐
 Compression and Vacuum Molding ☐
 Blow Molding ☐
 Sheet Lamination ☐
 Cast Resins ☐
 Shop Inspection Practices ☐
 Extrusion Molding Practices ☐

Extrusion Molding of:
 Tubes ☐
 Sheet ☐
 Profile Shapes ☐

Machine and Fixture Setup ☐
 Machine Types ☐
 Screw and Cylinder Construction ☐
 Heater Elements ☐
 Cooling Procedures ☐

Care and Maintenance of:
 Machines ☐
 Tools ☐
 Work Areas ☐

Compression Molding Practices:
 Mold Setup ☐
 Ejector mechanisms ☐
 Molding of Parts ☐
 Transfer molding ☐
 Machine Types ☐
 Heating Media ☐
 Cooling Jigs ☐
 Care and Maintenance of:
 Tools ☐
 Materials ☐

WHAT THE WORKER DOES—Continued

Thermo-forming Practices:

- Machines and Mold Forms.....☐
- Materials and Methods of Forming.....☐
- Vacuum Pumps.....☐
- Cutting and Edging.....☐
- Clamp Fixtures.....☐
- Preheater and Cooling Procedures.....☐
- Decorating Methods.....☐
- Scrap Grinding and Maintenance.....☐

Injection Molding:

Injection Molding of Thermoplastic

- Materials.....☐
- Machines, Molds, and Fixtures.....☐
- Heating and Cooling Methods.....☐
- Scrap Grinding.....☐
- Preheating.....☐
- Maintenance.....☐

Blow Molding Process:

- Materials.....☐
- Press Types.....☐
- Molds and Dies.....☐
- Preheater Equipment.....☐
- Equipment for:
 - Tube Processing.....☐
 - Sheet Blowing.....☐
 - Bottle Shape Forming.....☐
- Machines, Die Care, and Maintenance.....☐

Reinforced Plastics:

- Lay-up Work.....☐
- Pre-form Molding.....☐
- Filament Winding.....☐
- Glass Reinforcement.....☐

- Resins and Ancilla Materials.....☐
- Design and Construction of Tooling.....☐
- Pre-impregnation.....☐
- Heat Treatment.....☐
- Catalysts.....☐
- Fillers.....☐
- Core Materials.....☐

Foam Plastics Procedures:

- Syntactic Type Foams.....☐
- Open and Closed Cell Forms.....☐
- Materials.....☐
- Densities.....☐
- Mixing Procedures.....☐
- Tooling.....☐

Honeycomb Structures:

- Paper Honeycomb.....☐
- Fabric Honeycomb.....☐
- Metal Honeycomb.....☐
- Type of Structures and Uses.....☐
- Adhesive Bonding.....☐
- Welding.....☐
- Edge Sealing.....☐

Test Procedures:

- Testing Principal Plastics.....☐
- Selection of Plastic Materials.....☐
- Methods of Forming.....☐
- Mechanical and Structural Properties in Plastics.....☐
- Survey of Modern Plastics.....☐
- Adhesives Technology.....☐
- Plastics Technology.....☐
- Other (specify).....☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, or work aids used.

Machines and equipment:

- Abrasive finishing and deflashing machines.....☐
- Bead screening machines.....☐
- Blender loading machines.....☐
- Blenders.....☐
- Blenders-homogenizers.....☐
- Blow molding machinery.....☐
- Blow molding deflashing machines.....☐
- Calenders.....☐
- Capping machines.....☐
- Casting machinery:
 - Film casting.....☐
 - Resin casting.....☐
 - Slush casting.....☐
 - Vacuum casting.....☐
- Coating machinery and equipment:
 - Curtain coating machinery.....☐

- Dip coating machinery.....☐
- Electrostatic coating equipment.....☐
- Extrusion coating machinery.....☐
- Fluidized bed coating machinery.....☐
- Roller coating.....☐
- Coiling machines.....☐
- Compounding and mixing machinery:
 - Dry blenders.....☐
 - Intensive mixers.....☐
 - Liquid mixers.....☐
 - Roll mills.....☐
 - Tumbler mixers.....☐
- Compression molding machinery.....☐
- Continuous dipping line equipment.....☐
- Conveyors:
 - Pneumatic conveyors.....☐
 - Vacuum conveyors.....☐
 - Mechanical conveyors.....☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Cooling equipment	☐	Dry materials proportioners	☐
Cooling and heating equipment	☐	Mechanical hopper loaders	☐
Cut-off machines	☐	Pneumatic hopper loaders	☐
Decorating and marking machinery:		Metering, proportioning, and dispensing	
Embossing equipment	☐	machines	☐
Engraving machines	☐	Particle reduction and sizing equipment:	
Flock coating equipment	☐	Ball mills	☐
Hot stamping machines	☐	Knife cutting	☐
Labeling machines	☐	Pelletizers	☐
Paint spraying systems	☐	Shredders	☐
Printing systems	☐	Perforating machinery	☐
Silk screen equipment	☐	Preforming machinery:	
Vacuum metalizing equipment	☐	Preforming presses	☐
Degating equipment	☐	Vacuum forming equipment	☐
Dicers	☐	Presses:	
Die cutting presses	☐	Drill presses	☐
Dispensing machines	☐	Hot stamp foils	☐
Drying and preheating equipment:		Hot stamp presses	☐
Dehumidifiers	☐	Hydraulic presses	☐
Hopper drier preheaters	☐	Rotational casting equipment	☐
Infra-red heating units	☐	Sealing machines and equipment:	
Mold heating equipment	☐	Die sealing	☐
Preheaters	☐	Electronic sealing	☐
Vacuum driers	☐	Electrical high frequency sealing	☐
Extruder molding machinery	☐	Thermal sealing	☐
Fiber-glass roving cutters	☐	Ultrasonic sealing	☐
Foam fabricating equipment	☐	Slitting machines	☐
Foam molding machinery	☐	Static eliminating equipment	☐
Foam sheeting machines	☐	Take-off equipment:	
Granulators	☐	Cooling bath equipment	☐
Grinders:		Cut-off machines	☐
Ball Mills	☐	Pull-off equipment	☐
Pulverizers	☐	Saws	☐
Scrap grinders	☐	Vacuum sizers	☐
Heating and cooling equipment:		Take-off systems:	
Chilling equipment	☐	Blown film take-off system	☐
Cooling towers	☐	Calendering take-off system	☐
Band heaters	☐	Extrusion and laminating take-off system	☐
Rod and cartridge heaters	☐	Flat film and sheeting take-off system	☐
Heat exchange systems	☐	Pipes and profiles take-off system	☐
Hot water and steam boilers	☐	Wire coating take-off system	☐
Injection molding machinery:		Thermaforming systems:	
Combination plunger and screw system	☐	Pressure forming systems	☐
Plunger systems	☐	Vacuum forming systems	☐
Screw systems	☐	Thermaset molding machines and equipment:	
Irradiation equipment	☐	Autoclaves	☐
Laboratory processing equipment	☐	Compression presses	☐
Laminating and impregnating machinery:		Filament winding machines and	
Impregnating equipment	☐	equipment	☐
Thermoplastics laminating equipment	☐	Glass fiber choppers	☐
Thermoset laminating equipment	☐	Potting and encapsulating equipment	☐
Material Handling Systems Machinery:		Transfer presses	☐
Bulk materials handling systems	☐	Vibrators	☐
Automatic weighing equipment	☐	Vulcanizing equipment	☐
Batch weighing equipment	☐		

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Welding equipment:

- Hot gas welders
- Microwave cohesion welders
- Electronic welders
- Spin welders
- Ultrasonic welders

Winding machines:

- Winders
- Rewinders
- Other (specify)

Miscellaneous Machines and Equipment:

- Buffing and sanding machines
- Scales:
 - Balance scales
 - Platform scales
- Grinders
- Lathes:
 - Engine lathes
 - Turret lathes
- Hoists
- Pumps
 - Vacuum pumps
- Sewing machine
- Bandsaw
- Milling machines
 - Electrical discharge milling machine
- Routers
- Shapers
- Tapping machine
- Tracer mills
- Shears
- Fiberglass dowel machine
- Other (specify)

Tools:

Handtools:

- Files
- Hacksaws
- Hammers
- Hand spreaders
- Knives
- Mallets
- Scissors
- Scrapers
- Screwdrivers
- Snips
- Wrenches
- Other (specify)

Power handtools:

- Buffers
- Drills
- Grinders
- Polishers

- Riveting gun
- Scissors
- Screwdrivers
- Spray gun
- Other (specify)

Work Aids

Control devices:

- Control valves
- Counters
- Diameter controls
- Eccentricity controls
- Flow meters
- Indicators
- Length controls
- Level controls
- Photoelectric cells
- Pressure meters
- Pyrometers
- Recorders
- Sequencing controls
- Tachometers
- Temperature controls
- Thermometers
- Thickness controls
- Timers
- Transmitting devices
- Viscosity indicators
- Weight controls
- X-ray devices

Measuring Instruments:

- Calipers
- Dial indicators
- Feeler gages
- Micrometers
- Rules

Testing instruments:

- Acid bath tester
- Aging ovens
- Balances
- Brabender testers
- Burst testers
- Color testers
- Compressions tester
- Dielectric tester
- Electrostatic charge tester
- Hardness tester
- Heat guns
- Holiday detectors
- Humidity control testers
- Impact testers
- Infrared thermometers
- Mass flow meters
- Moisture meters
- Spectrophotometers

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Tension testers	☐	Product specifications	☐
Thickness gages	☐	Standard charts	☐
Torsion meters	☐	Formulas	☐
Vacuum gages	☐	Manuals	☐
Viscosimeters	☐	Inspection reports	☐
Weathering testers	☐	Laboratory reports	☐
Ultrasonic testers	☐	Fixtures	☐
Eddy current testers	☐	Jigs	☐
X-ray testers	☐	Guides	☐
Densitometers	☐	Stops	☐
Other (specify)	☐	Clamps	☐
		Hoists	☐
Blueprints	☐	Models	☐
Job orders	☐	Prototype products	☐
Material lists	☐	Other (specify)	☐
Production orders	☐		

PRODUCTS

Record an "X" to indicate products processed or manufactured.

Advertising products	☐	Bellows	☐
Aerosol components	☐	Belting	☐
Air conditioner components	☐	Belts	☐
Aircraft components	☐	Benches	☐
Amusement park cars	☐	Bezel assemblies	☐
Ammunition cases and containers	☐	Bezels	☐
Angles	☐	Bicycle parts and accessories	☐
Antenna components	☐	Billboard items	☐
Appliance components	☐	Billiard supplies	☐
Applicators	☐	Binders	☐
Archery products	☐	Bindings	☐
Ash trays	☐	Bins	☐
Autoclave and Hydroclave components	☐	Blades for products	☐
Automobile components	☐	Blood test kits	☐
Automotive components	☐	Blower components	☐
Awnings (reinforced fiber glass)	☐	Boats	☐
Badges	☐	Bobbins	☐
Bag liners	☐	Bolts	☐
Bags	☐	Bottle:	
Balls and ball components	☐	Cap bands	☐
Bars	☐	Caps	☐
Barrels	☐	Carriers	☐
Bases for products	☐	Closures	☐
Basins	☐	Disks	☐
Baskets	☐	Holders	☐
Basinets	☐	Bottles for products	☐
Bath fixtures	☐	Boudoir accessories	☐
Bathroom accessories and fixtures	☐	Bowling supplies	☐
Bats	☐	Bowls	☐
Battery parts	☐	Boxes	☐
Beads	☐	Brackets	☐
Beakers	☐	Braziers	☐
Bearings	☐	Brief cases	☐
Beer carriers	☐	Brush components	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Brushes	☐	Coatings	☐
Buckets	☐	Coffee makers	☐
Buckles	☐	Coffee pot parts	☐
Buffers	☐	Coil forms	☐
Building components	☐	Coils	☐
Bumpers for products	☐	Colanders	☐
Buoys	☐	Combs	☐
Bushings	☐	Commodore	☐
Business machine components	☐	Communication components	☐
Button blanks	☐	Commotators	☐
Buttons	☐	Compacts	☐
Cabinet components	☐	Computer components	☐
Cabinets	☐	Conduit	☐
Cable covering	☐	Cones	☐
Cages	☐	Connector assemblies	☐
Cake covers	☐	Connectors	☐
Cameos	☐	Consoles	☐
Camera equipment and components	☐	Containers for products	☐
Cams	☐	Control panels	☐
Candle holders	☐	Conveyor components	☐
Candy sticks	☐	Cord	☐
Cannisters	☐	Core assemblies	☐
Canoes	☐	Cores	☐
Canopies	☐	Corner blocks	☐
Cans	☐	Corners	☐
Canteen tops	☐	Counter tops	☐
Capacitors	☐	Couplings	☐
Caps for products	☐	Covers for products	☐
Carafes	☐	Crates	☐
Cards	☐	Creamers	☐
Cargo containers	☐	Crispers	☐
Carpeting	☐	Crystal ware	☐
Carriers	☐	Cup holders	☐
Cartridges	☐	Cups	☐
Cases for products	☐	Curlers	☐
Cash drawers	☐	Curtains	☐
Casket vaults	☐	Cushioning materials	☐
Casters	☐	Cushions	☐
Catheters	☐	Cutlery	☐
Cellular foam products	☐	Cylinders	☐
Chairs and chair components	☐	Data cells	☐
Channels	☐	Data processing equipment components	☐
Chess sets	☐	Decanters	☐
Christmas decorations and displays	☐	Decorations	☐
Cigarette holders	☐	Dental components and equipment	☐
Circuit boards	☐	Deodorizers	☐
Circuit breakers	☐	Desk accessories and sets	☐
Circuit components	☐	Desks	☐
Cleaning aids and compounds	☐	Developing trays	☐
Cleats	☐	Dials	☐
Clips	☐	Diaphragms	☐
Clock components	☐	Dictation equipment	☐
Closures for products	☐	Diffusers	☐
Clothespins	☐	Dinnerware	☐
Coasters	☐	Dishes	☐

PRODUCTS—Continued

Dishwasher components	☐	Fixtures	☐
Dispensers	☐	Flashing	☐
Display	☐	Flashlights and components	☐
Disposable items	☐	Floats	☐
Dividers	☐	Float valves	☐
Dollies	☐	Flooring	☐
Boxes	☐	Flower pots	☐
Door assemblies	☐	Flowers	☐
Doors	☐	Flumes	☐
Dowel pins	☐	Flyswatters	☐
Downspouts and gutters	☐	Foam products	☐
Drafting instruments	☐	Foils	☐
Drainboards	☐	Food processing equipment	☐
Drapery accessories	☐	Food service equipment	☐
Drapery hardware	☐	Footwear	☐
Drawers	☐	Forks	☐
Drinkware	☐	Forms	☐
Drop cloths	☐	Frames	☐
Dropper assemblies	☐	Freezer components	☐
Droppers	☐	Fuel cells	☐
Drums	☐	Funnels	☐
Dryers and components	☐	Furniture	☐
Ducts	☐	Furniture components	☐
Edgings	☐	Fuse components	☐
Egg cartons	☐	Games and game components	☐
Egg flats	☐	Garden accessories and sets	☐
Electrical components	☐	Gardening equipment	☐
Electronic components	☐	Gaskets	☐
Emblems	☐	Gates	☐
Enclosures	☐	Gears and gear components	☐
Engravings	☐	Gift items and wares	☐
Entertainment items and parts	☐	Glasses	☐
Escutcheons	☐	Glides	☐
Fabrics	☐	Globes and globe components	☐
Fairings	☐	Golfing accessories	☐
Fans	☐	Gratings	☐
Farm equipment and components	☐	Grids	☐
Facias	☐	Grilles	☐
Fasteners	☐	Grips	☐
Feeders	☐	Grommets	☐
Fencing	☐	Grooming aids	☐
Fenders	☐	Guards	☐
Ferrules and bases	☐	Guides	☐
Fiberglass products	☐	Gun components	☐
Figures	☐	Hair accessories	☐
Filaments	☐	Hammers	☐
Film	☐	Hampers	☐
Filter components	☐	Handles	☐
Filters	☐	Hardware	☐
Finials	☐	Harnesses	☐
Fire-extinguishers	☐	Hats	☐
Fishing lures	☐	Headboards	☐
Fishing reels	☐	Headers	☐
Filaments	☐	Hearing aid components	☐
Fittings	☐	Helmets	☐

PRODUCTS—Continued

Hobby horses
Hobby kits
Holders
Honeycomb structures
Hoods
Hooks
Hoppers
Hose
Hospital items and supplies
Housewares
Housings
Hub caps
Humidifier components
Ice buckets
Ice chests
Identification products
Impellers
Indicators
Infant accessories and items
Infant's wear
Inhalers
Inserts
Instrument components
Ingredients
Insulation
Insulators
Interrupters
Jars
Jewelry and accessories
Joints
Jugs
Keys
Knives
Knobs
Labels
Laminates
Lamp assemblies
Lamp components
Lamps
Lanterns
Lattices
Legs
Lenses
Letter openers
Lids
Lighting accessories and components
Liners
Loudspeakers
Lubricants
Luggage
Mallets
Manikins
Markers
Mats
Mattresses

Measurers
Meat trays
Meatallions
Meters
Microphonic components
Missile components
Mixers
Models
Moldings
Motor components
Name plates
Napkin holders
Nasal aspirators
Netting
Notions
Novelties
Nozzles
Nuts
Office equipment components
Optical product components
Ordnance devices and items
Organ components
Ornaments
Outlets
Packaging
Packaging components
Packaging compounds
Packaging materials
Packing
Padding
Pads
Pails and liners
Paneling
Panels
Pans
Pantryware
Partitions
Potteryware
Pen barrels and components
Pen holders
Pencil parts
Pet feeders
Phonograph records
Photocopier components
Photo equipment components
Picnic accessories and items
Pillows
Pinions
Pins
Pipe
Pipe fittings
Pipes
Pipettes
Piping components
Pitchers

PRODUCTS—Continued

Planters	☐	Screws	☐
Plaques	☐	Scrubbers	☐
Plates	☐	Sculpture	☐
Playground equipment	☐	Seals	☐
Plugs	☐	Seat parts	☐
Plumbing components and parts	☐	Seats	☐
Plumbing fixtures and fittings	☐	Separators	☐
Pointers	☐	Sewer and drain fittings	☐
Poker chips and decks	☐	Sever mains	☐
Poles	☐	Sewer pipe and fittings	☐
Pool balls	☐	Sewing machine components	☐
Popsicle molds	☐	Shades	☐
Posts	☐	Shafts	☐
Pots	☐	Shakers	☐
Precision parts	☐	Shapes	☐
Profiled parts	☐	Sheets	☐
Profiles	☐	Sheeting	☐
Projector parts	☐	Shelves	☐
Projectors	☐	Shelving	☐
Protectors	☐	Shields	☐
Protractors	☐	Shoe findings	☐
Pulleys	☐	Shoe products	☐
Pulls	☐	Shower doors	☐
Pump components	☐	Shower accessories	☐
Pumps	☐	Shrouds	☐
Push buttons	☐	Shutters	☐
Puzzles	☐	Siding	☐
Racks	☐	Signs	☐
Radar screens	☐	Sinks and accessories	☐
Radio components	☐	Skegs	☐
Radomes	☐	Skylights	☐
Railings	☐	Sleeves	☐
Razor components	☐	Sleeving	☐
Receptacles	☐	Sockets	☐
Reducers	☐	Sonar domes	☐
Reels	☐	Sonar gear components	☐
Refrigeration components	☐	Spacers	☐
Refrigerator accessories	☐	Spatulas	☐
Relay components	☐	Spigots	☐
Relays	☐	Splines	☐
Retainers	☐	Spools	☐
Ribbons	☐	Sponges	☐
Rings	☐	Spoons	☐
Rivets	☐	Sporting goods	☐
Rods	☐	Spouts	☐
Rollers	☐	Springs	☐
Rotors	☐	Sprinklers and components	☐
Rulers	☐	Stacks	☐
Rules	☐	Stair components	☐
Runners	☐	Stampings	☐
Scale parts	☐	Stands	☐
Scales	☐	Statuary	☐
Scoops	☐	Stereo components	☐
Scrapers	☐	Stirrers	☐
Screens	☐		

PRODUCTS—Continued

Stones	☐	Towers	☐
Stools	☐	Toy kits	☐
Stopcocks	☐	Toy parts	☐
Stoppers	☐	Toys	☐
Strainers	☐	Tracks	☐
Strapping	☐	Trailer components	☐
Straps	☐	Trains	☐
Straws	☐	Transformer parts	☐
Strips	☐	Traps	☐
Structural components	☐	Trash cans and containers	☐
Suitcases	☐	Travel accessories	☐
Sunglasses	☐	Trays	☐
Surfboards	☐	Trim	☐
Switch components	☐	Trimming	☐
Switches	☐	Trophies and components	☐
Swizzle sticks	☐	Tube components	☐
Syringes	☐	Tubes	☐
Table accessories	☐	Tubing	☐
Tables	☐	Tubs	☐
Table ware	☐	Tumblers	☐
Tabs	☐	Tuner parts	☐
Tags	☐	Typewriter parts	☐
Tanks	☐	Urinals	☐
Tape	☐	Utensil parts	☐
Tape components	☐	Vacuum cleaner components	☐
Tape dispensers	☐	Valve assemblies	☐
Tape recorders	☐	Valves	☐
Tapes	☐	Ventilating equipment components	☐
Tarps	☐	Vessels	☐
Tees	☐	Vials	☐
Teflon products	☐	Viaors	☐
Telephone components	☐	Wallboard	☐
Telephone circuit networks	☐	Wall coverings	☐
Television components	☐	Washers	☐
Templates	☐	Waste baskets	☐
Terminal blocks	☐	Weather stripping	☐
Terminal boards	☐	Webbing	☐
Terminals	☐	Welting	☐
Test tubes	☐	Welts	☐
Textile industry components	☐	Wheels	☐
Thermometers and components	☐	Window components	☐
Thermostat components	☐	Windows	☐
Thread	☐	Windshields	☐
Tile	☐	Wipers	☐
Timing gears	☐	Wire connectors	☐
Tires	☐	Wire ties	☐
Toilet seats	☐	Wiring devices	☐
Tongs	☐	Yarns	☐
Tools and molds	☐	Yo-yos	☐
Tool components	☐	Zippers	☐
Tops	☐	Other (specify)	☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial:		Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

FOOD PROCESSING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs, and coordinates processing activities of a(n):

- | | |
|--|--------------------------|
| Slaughtering and meat packing plant | ☐ |
| Creamery | ☐ |
| Canning and preserving plant | ☐ |
| Grain and feed mill | ☐ |
| Bakery | ☐ |
| Sugar refinery | ☐ |
| Confectionery plant | ☐ |
| Distillery | ☐ |
| Winery | ☐ |
| Brewery | ☐ |
| Soft drink plant | ☐ |
| Organic edible oil refining plant | ☐ |
| Specialty food or food preparation plant | ☐ |
| Other (specify) | ☐ |

Supervises, and coordinates activities of, workers engaged in:

- | | |
|--|--------------------------|
| Slaughtering, dressing or processing, or packing of meats or meat products | ☐ |
| Killing, dressing, processing, or packing poultry or small game | ☐ |
| Breaking and processing of eggs | ☐ |

Canning and preserving of:

- | | |
|---------------------------------|--------------------------|
| Vegetables | ☐ |
| Fruits | ☐ |
| Seafoods | ☐ |
| Vegetable or fruit juices | ☐ |

Processing:

- | | |
|---|--------------------------|
| Milk and dairy products | ☐ |
| Sugar and sugar products | ☐ |
| Bakery products | ☐ |
| Candy and confectionery items | ☐ |
| Grain and feed mill products | ☐ |
| Vinous wines and spirits | ☐ |
| Distilled liquors | ☐ |
| Malt and malt liquors | ☐ |
| Vegetable oils | ☐ |
| Animal and marine fats and oils | ☐ |
| Coffee and coffee extracts | ☐ |
| Margarine, table oils, and other edible fats and oils | ☐ |
| Ice | ☐ |
| Macaroni, spaghetti, and noodles | ☐ |
| Miscellaneous food preparation | ☐ |
| Other (specify) | ☐ |

WHAT THE WORKER DOES—Continued

- | | | | |
|---|--------------------------|--|--------------------------|
| Prepares work and worker schedules | ☐ | Other (specify) | ☐ |
| Assigns workers to specific duties | ☐ | | |
| Interprets processing orders, product specifications, and technical data for workers | ☐ | Operates, controls, or tends machines or equipment to: | |
| Gives workers directions concerning assigned duties | ☐ | Crush or mill materials into size for further processing | ☐ |
| Advises workers on methods and procedures for solving work problems | ☐ | Mix or compound materials according to formula | ☐ |
| Reviews laboratory and testing reports on materials and products | ☐ | Obtain mixture or compound of specified texture or consistency | ☐ |
| Orders changes in processing methods or equipment operation | ☐ | Separate from compound or mixture specified materials | ☐ |
| Coordinates processing activities with activities of other processing stations | ☐ | Produce bacteria or other micro-organisms for use in processing of food | ☐ |
| Requisitions materials and supplies for scheduled processing activities | ☐ | Break down organic molecules by fermentation | ☐ |
| Trains workers in machine or equipment operation | ☐ | Flavor or preserve food, materials, or products | ☐ |
| Notifies maintenance personnel of needed machine or equipment repairs | ☐ | Distill liquid materials for obtaining specified substances | ☐ |
| Enforces worker compliance with established procedures, regulations, and safety rules | ☐ | Saturate materials with other substances | ☐ |
| Observes workers to insure compliance with work directions | ☐ | Roast materials or products | ☐ |
| Keeps processing and production records | ☐ | Melt materials for further processing | ☐ |
| Prepares activity and production reports | ☐ | Dry materials or products | ☐ |
| Other (specify) | ☐ | Dehydrate materials or products | ☐ |
| | | Temper materials | ☐ |
| Reads or reviews: | | Pasteurize materials | ☐ |
| Product specifications | ☐ | Extract specified substances from raw materials | ☐ |
| Production schedules | ☐ | Cool or condense materials or products | ☐ |
| Material specifications | ☐ | Freeze materials or products | ☐ |
| Laboratory analyses of materials or products | ☐ | Cook ingredients according to specifications | ☐ |
| Processing schedules | ☐ | Coat, fill, or decorate products with confectionery materials | ☐ |
| Formulas | ☐ | Fill or stuff moldings or casings with materials | ☐ |
| Recipes | ☐ | Cut or slice products or materials into specified size | ☐ |
| Work orders | ☐ | Spray products with coating materials | ☐ |
| Other (specify) | ☐ | Hull materials | ☐ |
| | | Shell materials | ☐ |
| Determines: | | Peel materials | ☐ |
| Manpower requirements for scheduled operations | ☐ | Wash and sanitize materials or dairy products processing equipment | ☐ |
| Classifications of workers for operations | ☐ | Homogenize materials | ☐ |
| Material processing sequences | ☐ | Other (specify) | ☐ |
| Material processing requirements | ☐ | | |
| Material requirements | ☐ | Assists operator of machines or equipment to process materials or products | ☐ |
| Routing of materials in process through processing stations | ☐ | Sets controls for specified: | |
| Set up requirements for machines | ☐ | Temperature | ☐ |
| Control settings on machines and equipment | ☐ | Pressure | ☐ |
| Adjustments to machines and equipment required | ☐ | Vacuum | ☐ |
| | | Material flow rates | ☐ |

WHAT THE WORKER DOES—Continued

Material feed rates	☐	Compares color of materials with standard	☐
Processing operations	☐	charts of samples	☐
Weight of material	☐	Adds materials to solution or mixture to	☐
Volume of material	☐	obtain specified:	☐
Other (specify)	☐	Concentration	☐
		Strength	☐
Moves levers or controls to:		Color	☐
Start or stop machines or equipment	☐	Taste	☐
Regulate speed of machines	☐	Viscosity	☐
Set length of stroke on press ram	☐	Consistency	☐
Adjust processing operations	☐	Acidity	☐
Regulate automatic feed mechanisms	☐	Neutralization	☐
Other (specify)	☐	Flavor	☐
		Alcoholic proof	☐
Monitors:		Fermentation	☐
Panelboard gages, meters, and lights	☐	Germination	☐
Recording instruments and indicators	☐	Organic reaction	☐
Temperature gages	☐	Moves levers to dump processed materials	☐
Flow meters	☐	into container or tank	☐
Machine operations	☐	Starts pumps to transfer materials into next	☐
Material processing operations	☐	processing unit or into storage tanks	☐
Other (specify)	☐	Feeds materials into processing equipment	☐
		or machines	☐
Observes:		Offbears materials or products	☐
Workers to insure compliance with work			
directions, regulations, and safety rules	☐	Performs manual operations to:	☐
Product for conformance with		Mix, blend, or knead ingredients	☐
specifications	☐	Shape, roll, and cut materials into specified	☐
Color, texture, and consistency of materials	☐	shape	☐
Operational performance of machines or		Apply glaze, topping, icing, or decorations	☐
equipment	☐	on products	☐
Other (specify)	☐	Pull, spin, or roll confectionery products	☐
		Dip products in solutions for curing,	☐
Calculates batch weights and proportions		preserving, or salting	☐
of materials or ingredients	☐	Shackle legs of animals to be slaughtered	☐
Weighs material or ingredients specified	☐	Stun animals before slaughtering	☐
Dumps materials or ingredients into tank,		Sever jugular vein of animals or poultry	☐
hopper, or kettle	☐	Skin animals	☐
Starts pumps and meters liquid ingredients		Pluck feathers and clean poultry	☐
into machine or equipment	☐	Scale and butcher fish and	☐
Opens valves to fill tank, kettle, or other		shellfish	☐
equipment to specified height	☐	Trim meat from head of animal	☐
Opens valves to admit steam into mixture or		Saw or trim animal carcass	☐
jacket of kettle or cooker	☐	Cut out, trim, sort, and wash viscera	☐
Starts agitators, mixing blades, or beaters	☐	Wrap side of carcass	☐
Feels sample of mixture for specified texture		Cut standard cuts of meats	☐
or consistency	☐	Bone meat or poultry	☐
Draws sample of materials for laboratory		Cut up poultry and small game	☐
analysis or testing on station	☐	Hang meat or meat products in smoking	☐
Tests solutions for:		or drying room	☐
Specific gravity	☐	Sort materials according to grade	☐
Viscosity	☐	Remove foreign matter from raw materials	☐
Acidity	☐	Pack materials or products in freeze room	☐
Flavor	☐	Sew or tie casing after filling with product	☐
Alcoholic content or proof	☐	Other (specify)	☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Management	☐	Workers	☐
Supervisors	☐	Helpers	☐
Technical Personnel	☐	Crew Members	☐
Other Supervisors	☐	Other (specify)	☐
Laboratory Personnel	☐		

EDUCATION AND TRAINING

Record an "X" to indicate education and training requirements.

Elementary	☐	Technical School	☐
High School	☐	Apprenticeship	☐
Junior College	☐	On-the-job Training	☐
College	☐	Other (specify)	☐
Vocational School	☐		

UNION AFFILIATION

Record an "X" to indicate union affiliation.

Teamsters Affiliated Locals:		Packing House Workers Union	☐
Creamery Employees and Drivers Union	☐	Grain Millers Union	☐
Brewery, Soda, and Mineral Water Bottlers	☐	Brewery and Brewery Workers Union	☐
Food Processors, Packers, Warehouseman, ...	☐	Bottlers Union	☐
and Clerical	☐	Cannery Workers Union	☐
Bakery and Confectionery Workers, ...	☐	Packing House, Food, and Allied	☐
International Union of America	☐	Workers Union	☐
Butchers Union	☐	Distillery, Wine, and Allied Workers	☐
Baker's Union	☐	International Union	☐
Food Processors, Helpers, and Sales	☐	Other (specify)	☐
Drivers Union	☐		

LICENSURE OR CERTIFICATION

Record an "X" to indicate licenses or certification required.

Federal	☐	Local	☐
State	☐	Other (specify)	☐
County	☐		

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, or work aids used.

Machines:		Conveyors:	
Blanching machine	☐	Belt conveyors	☐
Blenders	☐	Elevators	☐
Blending tanks	☐	Pneumatic conveyors	☐
Casing machines:		Screw conveyors	☐
Casing running machine	☐	Cleaning machines:	
Casing linking machine	☐	Air cleaning machines	☐
Casing stuffing machine	☐	Linter machines	☐
Centrifuges	☐	Washing machines	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Coating machines:

- Candy enrobing machine ☐
- Candy sanding machine ☐
- Icing machines ☐
- Spray coating machines ☐

Cake forming presses

- ☐

Cake stripping machines

- ☐

Coring machines

- ☐

Churning machines

- ☐

Doughnut making machines

- ☐

Cutting machines:

- Dividing machines ☐
- Dicing machines ☐
- Halving machines ☐
- Chopping machines ☐
- Grating machines ☐
- Mincing machines ☐
- Shredding machines ☐
- Slicer cutting machine ☐
- Slicing machines ☐

Hulling machines

- ☐

Grain polishing machines

- ☐

Egg breaker and yolk separating machine

- ☐

Grinding mills:

- Fuss mills ☐
- Hammermills ☐
- Impact mills ☐
- Powder mills ☐
- Roll mills ☐
- Stone grinding mills ☐

Mixing machines:

- Beater mixer machines ☐
- Batter mixer machines ☐
- Dough mixing machines ☐
- Mingling machines ☐
- Rotary drum mixing machine ☐
- Vortator ☐

Filling machines:

- Carton filling machines ☐
- Bag filling machines ☐
- Bottle filling machines ☐
- Pie filling machines ☐

Molding machines

- Candy molding machine ☐

Curing injection machine

- ☐

Filters:

- Char filters ☐
- Filter presses ☐
- Plate and frame filter presses ☐
- Rotary leaf filter ☐
- Rotary drum vacuum filters ☐

Sorting machines:

- Electric eye sorting machines ☐
- Sorting and sizing machines ☐
- Sizing machines ☐

Screening machines:

- Vibrating screens ☐
- Sifting machines ☐
- Shaking machines ☐

Carton forming, filling, and sealing

- machine ☐

Carton sealing machine

- ☐

Packaging machines

- ☐

Pitting machines

- ☐

Peeling machines

- ☐

Pelletizing machines

- ☐

Pretzel forming machine

- ☐

Pan greasing machine

- ☐

Shelling machines

- ☐

Wafer making machine

- ☐

Dehairing machine

- ☐

Car tipple machine

- ☐

Presses:

- Extruding presses ☐
- Hydraulic presses ☐
- Decoiling presses ☐
- Sugar cube presses ☐

Pumps:

- Centrifugal pumps ☐
- Vacuum pumps ☐
- Material transfer pumps ☐

Stick inserting machines

- ☐

Other (specify)

Tools:

Handtools:

- Wrenches ☐
- Screwdrivers ☐

Knives:

- Boning knives ☐
- Trimming knives ☐
- Fillet knives ☐
- Curd knives ☐

Meat saws

- ☐

Cleavers

- ☐

Scrapers

- ☐

Spatulas

- ☐

Spoons

- ☐

Forks

- ☐

Brushes

- ☐

Icing bags

- ☐

Hand beaters

- ☐

Other (specify)

Power handtools:

- Electrical handtools ☐
- Pneumatic handtools ☐
- Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Equipment:

Processing tank equipment:

- Melting tanks ☐
- Flotation tanks ☐
- Settling tanks ☐
- Mixing tanks ☐
- Cistern tanks ☐
- Weigh scale tanks ☐
- Fermenting tanks ☐
- Germination tanks ☐
- Steeping tanks ☐
- Brine tanks ☐
- Brine making tanks ☐
- Carbonation tanks ☐
- Curing tanks ☐
- Refrigerated tanks ☐
- Proofing tanks ☐
- Tempering tanks ☐
- Other (specify) ☐

- Sterilizing equipment ☐
- Clean-in-place equipment ☐
- Diffusing equipment ☐
- Beet diffusing equipment ☐
- Percolating equipment ☐
- Smoking equipment ☐
- Roasting equipment ☐
- Continuous roasting equipment ☐
- Crystallizers ☐
- Sulfurizing equipment ☐
- Smoking equipment ☐
- Rectifier equipment ☐
- Pasteurizers ☐
- Homogenizers ☐
- Continuous milk processing equipment ☐
- Dehydrating equipment ☐
- Evaporators ☐
- Ovens ☐
- Continuous baking ovens ☐
- Retorts ☐
- Oasts ☐
- Furnaces ☐
- Other (specify) ☐

Processing rooms:

- Smoke rooms ☐
- Wine cellars ☐
- Proofing rooms ☐
- Freeze rooms ☐
- Other (specify) ☐

Work Aids:

Measuring devices:

- Micrometers ☐
- Refractometers ☐
- Thermometers ☐
- Salinometers ☐
- Pyrometers ☐
- Ph meters ☐
- Hydrometers ☐
- Alcohol proof hydrometer ☐
- Titrometer ☐
- Manometer ☐
- Turbidometer ☐
- Calorimeter ☐
- Viscosimeter ☐
- Flow meter ☐
- Other (specify) ☐

Manuals:

- Processing manuals ☐
- Equipment operation manuals ☐
- Safety manuals ☐
- Other (specify) ☐

Specifications:

- Processing specifications ☐
- Material specifications ☐
- Product specifications ☐
- Other (specify) ☐

- Station logs ☐
- Production reports ☐
- Processing reports ☐
- Formulas ☐
- Recipes ☐
- Production forms ☐
- Testing forms ☐
- Proofsticks ☐
- Molds ☐
- Funnels ☐
- Cooling slabs ☐
- Heating slabs ☐
- Warming slabs ☐
- Skewers ☐
- Airbases ☐
- Waxpaper ☐
- Mixing bowls ☐
- Ultraviolet lamps ☐
- Sorting tables ☐
- Chopping blocks ☐
- Color charts ☐
- Other (specify) ☐

PRODUCTS

Record an "X" to indicate type or product processed or produced

Type of food products:

Baked	☐
Boiled	☐
Boned	☐
Bottled	☐
Brined	☐
Canned	☐
Concentrated	☐
Condensed	☐
Cooked	☐
Cultured	☐
Cured	☐
Dehydrated	☐
Deviled	☐
Dressed	☐
Dried	☐
Fermented	☐
Flash frozen	☐
Freeze dried	☐
Fresh	☐
Homogenized	☐
Jammed	☐
Jellied	☐
Kosher	☐
Packaged	☐
Paste	☐
Pasturized	☐
Pickled	☐
Potted	☐
Powdered	☐
Preserved	☐
Salted	☐
Smoked	☐
Spiced	☐
Steamed	☐
Stewed	☐
Stuffed	☐
Vitaminized	☐
Other (specify)	☐

Meats and meat products:

Bacon	☐
Beef	☐
Blood meal	☐
Corned beef	☐
Frankfurters	☐
Headcheese	☐
Lamb	☐
Luncheon meats	☐
Meat extracts	☐
Meat meal	☐
Mutton	☐
Pastrami	☐

Pigs feet	☐
Pork	☐
Sausage	☐
Scrapple	☐
Tripe	☐
Vienna sausage	☐
Other (specify)	☐

Meat byproducts:

Grease	☐
Hides	☐
Lard	☐
Tallow	☐
Other (specify)	☐

Meat animal food:

Horsemeat	☐
Bone meal	☐
Dog meat	☐
Cat meat	☐
Other (specify)	☐

Poultry and poultry products:

Chicken	☐
Cornish hen	☐
Duck	☐
Eggs	☐
Geese	☐
Turkey	☐
Other (specify)	☐

Small game:

Rabbit	☐
Hare	☐
Other (specify)	☐

Seafood and seafood products:

Finfish:	
Anchovies	☐
Cod	☐
Herring	☐
Mackerel	☐
Salmon	☐
Sardines	☐
Swordfish	☐
Tuna	☐
Other (specify)	☐

Shellfish:

Clam	☐
Crab	☐
Lobster	☐
Muscle	☐

PRODUCTS—Continued

Oysters ☐
 Scallops ☐
 Shrimp ☐
 Other (specify) ☐

Seafood products:

Caviar ☐
 Clam chowder ☐
 Finnan haddie ☐
 Fish egg bait ☐
 Fish oil meal ☐
 Fish oil:
 Cod liver oil ☐
 Whale oil ☐
 Fish pet foods ☐
 Other (specify) ☐

Dairy products:

Anhydrous milkfat ☐
 Baby formulas ☐
 Butter ☐
 Buttermilk ☐
 Butter oil ☐

Cheese:

Cheese pastes ☐
 Cheese spreads ☐
 Chocolate milk ☐
 Cream ☐
 Ice cream ☐
 Ice cream mix ☐
 Ice milk ☐
 Ice cream mix ☐
 Lactose ☐
 Malted milk ☐
 Mellorine ☐
 Milk ☐
 Parfait ☐
 Sherbert ☐
 Spumoni ☐
 Yogurt ☐
 Zoolak ☐
 Other (specify) ☐

Agricultural food products:

Fruits:

Cider ☐
 Fruit butter ☐
 Fruit cocktail ☐
 Fruit jelly ☐
 Fruit juice ☐
 Fruit jam ☐
 Fruit marmalade ☐
 Fruit paste ☐
 Fruit preserves ☐

Fruit nectar ☐
 Fruit puree ☐
 Fruit pudding ☐
 Fruit glaze ☐
 Fruit concentrate ☐

Nuts:

Almond paste ☐
 Nut oil ☐

Vegetables

Vegetable pastes:
 Tomato ketchup ☐
 Tomato chili sauce ☐
 Tomato paste ☐
 Tomato puree ☐
 Vegetable juices ☐
 Vegetable puree ☐

Vegetable oils and spreads:

Margarine ☐
 Olive oil ☐
 Salad oils ☐
 Corn oil ☐
 Cottonseed oil ☐
 Soybean oil ☐
 Castor oil ☐
 Coconut oil ☐
 Palm kernel oil ☐
 Peanut oil ☐
 Safflower oil ☐
 Vegetable cooking oil ☐
 Shortenings ☐
 Other (specify) ☐

Grain products:

Breakfast cereals ☐
 Bran and middlings:
 Oat ☐
 Rice ☐
 Rye ☐
 Wheat ☐

Corn products:

Corn flour ☐
 Corn sirup ☐
 Corn oil cake ☐
 Corn oil meal ☐
 Corn starch ☐
 Corn sugar ☐
 Dextrine ☐
 Dextrose ☐
 Gluten ☐
 Hominy ☐
 Hominy grits ☐

Flour:

Pizza ☐

PRODUCTS—Continued

Buckwheat	☐
Rice	☐
Rye	☐
Sorghum grain	☐
Wheat	☐
Flour blends or mixes:	
Biscuit	☐
Cake	☐
Doughnut	☐
Gingerbread	☐
Pancake	☐
Phosphated	☐
Graham	☐
Starch:	
Potato	☐
Rice	☐
Root	☐
Wheat	☐
Oatmeal	☐
Other (specify)	☐

Bakery Products:

Bagel ..	☐
Bread ..	☐
Buns ..	☐
Cakes ..	☐
Crullers ..	☐
Doughnuts ..	☐
Knishes ..	☐
Pastries ..	☐
Pies ..	☐
Rolls ..	☐
Sponge goods ..	☐
Cookies ..	☐
Crackers ..	☐
Ice cream cones ..	☐
Pretzels ..	☐
Sugar wafers ..	☐
Zwieback ..	☐
Other (specify) ..	☐

Sugar and sugar products:

Beet sugar	☐
Beet molasses	☐
Blackstrap molasses	☐
Brown sugar	☐
Cane sugar	☐
Cane sirup	☐
Dried beet pulp	☐
Invert sugar	☐
Powdered sugar	☐
Sugar cubes ..	☐
Other (specify) ..	☐

Confectionary products:

Candy	☐
Candy bars	☐
Chewing gum	☐
Chocolate candy	☐
Cough drops	☐
Licorice	☐
Lozenges	☐
Marshmallows	☐
Marzipan	☐
Nuts	☐
Baking chocolate	☐
Chocolate coatings	☐
Chocolate sirup	☐
Cocoa	☐
Other (specify)	☐

Beverages:

Malt liquors:

Ale	☐
Beer	☐
Near beer	☐
Stout	☐

Malt

Vinous liquors:

Brandy	☐
Brandy spirits	☐
Wine	☐

Distilled or blended liquors:

Applejack	☐
Cocktails	☐
Cordials	☐
Ethyl alcohol	☐
Gin	☐
Liqueurs	☐
Rum	☐
Vodka	☐

Whiskey:

Bourbon	☐
Rye	☐
Scotch	☐

Soft drinks and carbonated water:

Bottle beer	☐
Root beer	☐
Carbonated soda pop	☐
Ginger ale	☐
Mineral water	☐
Other (specify)	☐

Flavorings, Extracts, and Sirups:

Beverage bases	☐
Bitters	☐
Burnt sugar	☐
Coffee flavoring and sirups	☐

PRODUCTS—Continued

Specialty foods:

- Baby foods ☐
- Corn chips ☐
- Gelatin desserts ☐
- Kraut ☐
- Honey ☐
- Box lunches ☐
- Peanut butter ☐
- Potato chips ☐
- TV dinners ☐
- National native foods ☐
- Other (specify) ☐

Seasonings and dressings:

- Food dressings ☐
- French dressing ☐
- Horseradish ☐
- Mayonnaise ☐
- Mustard ☐
- Pickles ☐
- Relish ☐
- Russian dressing ☐
- Soy sauce ☐
- Meat seasonings ☐
- Spices ☐
- Vinegar ☐
- Other (specify) ☐

Miscellaneous food products:

- Coffee ☐
- Coffee extracts ☐
- Instant coffee ☐

- Coffee concentrates ☐
- Ice:
 - Cubes ☐
 - Crushed ☐
 - Block ☐
- Macaroni ☐
- Noodles ☐
- Spaghetti ☐
- Vermicelli ☐
- Bakers malt ☐
- Baking powder ☐
- Chicory ☐
- Instant cocoa ☐
- Instant chocolate ☐
- Leavening preparations ☐
- Maple sirup ☐
- Marshmallow creme ☐
- Pancake sirup ☐
- Pectin ☐
- Tea ☐
- Yeast ☐
- Corn chips ☐
- Bouillon cubes ☐
- Cider ☐
- Gelatin preparations ☐
- Meat seasonings ☐
- Peanut butter ☐
- Spices ☐
- Vinegar ☐
- Potato chips ☐
- Other (specify) ☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

- | | |
|--|---|
| Agriculture ☐ | Financial ☐ |
| Commercial: | Government Service ☐ |
| Business Service ☐ | Industrial ☐ |
| Food and Beverage ☐ | Insurance ☐ |
| Lodging Service ☐ | Legal ☐ |
| Personal Service ☐ | Library ☐ |
| Printing and Publishing ☐ | Medical Service ☐ |
| Repair Service ☐ | Military ☐ |
| Sales ☐ | Nonprofit ☐ |
| Communications ☐ | Office Service ☐ |
| Conservation ☐ | Recreation ☐ |
| Construction ☐ | Social Service ☐ |
| Correctional ☐ | Subsurface and Space ☐ |
| Educational ☐ | Transportation ☐ |
| Entertainment ☐ | Utilities ☐ |
| Exhibition Center ☐ | Other (specify) ☐ |

HISTORY, SOCIOLOGY, AND ANTHROPOLOGY WORK

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Plans, organizes, and conducts:

Historical research and studies to:

Reconstruct chronological accounts or records of current or past events:

Dealing with some phase of human activity as:

- | | |
|--|--------------------------|
| Individuals | ☐ |
| Social groupings | ☐ |
| Ethnic groupings | ☐ |
| Political groupings | ☐ |
| Geographic groupings | ☐ |
| Reconstruct a career or phase in a life of an individual | ☐ |
| Reconstruct the genealogical background of an individual or family | ☐ |
| Establish the descent from a specific ancestor and identify forebears | ☐ |
| Authenticate details of items peculiar to given historical period or specific locality | ☐ |
| Avoid anachronisms and inaccuracies in depicting items of a specific historical period | ☐ |
| Other (specify) | ☐ |

Sociological research and studies on:

- | | |
|---|--------------------------|
| Origin and development of human beings | ☐ |
| Patterns of culture and social organization arising from group life in society | ☐ |
| Relationships between criminal law and the social order and causes of crime | ☐ |
| Group relationships in an industrial organization | ☐ |
| Punishment for, and prevention of, crime | ☐ |
| Management of penal institutions and rehabilitation of criminal offenders | ☐ |
| Rural problems caused by impact of scientific and industrial revolutions on the rural way of life | ☐ |
| Effect of physical environment and technology on spatial distribution of people and their activities | ☐ |
| Social problems arising from group or individual deviation from commonly
accepted standards of conduct | ☐ |
| Social problems rooted in the failure of society to achieve its collective purposes | ☐ |
| Social patterns and distinctive problems resulting from urban environment | ☐ |
| Other (specify) | ☐ |

Physical anthropological research and studies concerning:

- | | |
|--|--------------------------|
| Origin, evolution, and races of man | ☐ |
| Man's distribution and characteristics | ☐ |
| Meanings and causes of human physical differences | ☐ |
| Physical and physiological adaptations to different environments and heredity
characteristics of living populations | ☐ |
| Growth patterns, sexual differences, and aging phenomena of human groups | ☐ |
| Other (specify) | ☐ |

Archeological research, expeditions, studies, and field work to:

- | | |
|--|--------------------------|
| Reconstruct records of extinct or preliterate cultures | ☐ |
| Reconstruct records of literate periods of major civilizations | ☐ |

WHAT THE WORKER DOES—Continued

- | | | | |
|--|--------------------------|---|--------------------------|
| Uncover, reconstruct, and preserve artifacts of civilizations | ☐ | Researches sources of information | ☐ |
| Interpret artifacts according to civilization and period of history | ☐ | Consults with experts or witnesses of events | ☐ |
| Other (specify) | ☐ | Organizes and evaluates data on basis of authenticity or relative significance | ☐ |
| Ethnological research and comparative studies concerning: | | Reduces and processes data | ☐ |
| Cultures, or selected aspects of living peoples of extinct races | ☐ | Analyzes, classifies, and interprets: | |
| Historical relationships or typographical classifications of cultures | ☐ | Data on social phenomena as: | |
| Pre-industrial or non-western societies to ascertain the culture's: | | Communities | ☐ |
| Social and political organization | ☐ | Social institutions | ☐ |
| Religion | ☐ | Ethnic minorities | ☐ |
| Economics | ☐ | Social classes | ☐ |
| Mythology and traditions | ☐ | Social changes | ☐ |
| Intellectual and social life | ☐ | Archeological findings in order to determine: | |
| Other (specify) | ☐ | Age and period of artifacts or civilization | ☐ |
| Scientific linguistics research and studies concerning: | | Cultural identity | ☐ |
| Structure and development of a language | ☐ | Other (specify) | ☐ |
| Words and their structural characteristics | ☐ | Prepares: | |
| Reconstructing and deciphering ancient languages | ☐ | Historical narrative, brief, or outline from data | ☐ |
| Components, structure, and relationship within a language | ☐ | Literary portrayal of character based on findings | ☐ |
| Origin, history, and development of words | ☐ | Charts showing lines of descent and family relationship | ☐ |
| Tracing derivation of words | ☐ | History of family in narrative form | ☐ |
| Tracing meaning of words from origin in parent language to present usage | ☐ | Historical accounts on: | |
| Development of improved methods of translation | ☐ | Technological evolution within an industry | ☐ |
| Teaching of language to other than native speakers | ☐ | Manners and customs peculiar to a certain period | ☐ |
| Preparation of language teaching materials, dictionaries and handbooks | ☐ | Development within specified discipline or field of work | ☐ |
| Reducing unwritten language to standardized written form | ☐ | Reports on anthropological findings as: | |
| Preparation of literacy materials of the language | ☐ | Human physique of race | ☐ |
| Other (specify) | ☐ | Social customs | ☐ |
| Identifies and states nature, scope, and area of research | ☐ | Artifacts located | ☐ |
| Develops methods, techniques, and means for collecting and evaluating data | ☐ | Scientific papers or publications on research | ☐ |
| Directs and coordinates activities of research workers | ☐ | Description of differences between two languages for improving translation methods | ☐ |
| | | Other (specify) | ☐ |
| | | Applies anthropological data and techniques for solving problems of human relations in fields of: | |
| | | Industrial relations | ☐ |
| | | Race and ethnic relations | ☐ |
| | | Social work | ☐ |
| | | Public administration | ☐ |
| | | Education | ☐ |
| | | Public health | ☐ |
| | | Foreign or transcultural programs | ☐ |
| | | Other (specify) | ☐ |

WHAT THE WORKER DOES—Continued

Formulates theories from research for application in: Historical field ☐ Sociological field ☐ Anthropological field ☐ Ethnological field as: General laws of cultural development ☐ Rules of social and cultural behavior ☐ Value orientations ☐ Other (specify) ☐	Other (specify) ☐ Studies human fossils and their meaning in terms of long range human evolution ☐ Observes and measures bodily variations and physical attributes of existing human types ☐ Supervises and coordinates activities of workers engaged in: Digging for archeological expeditions ☐ Uncovering ancient structures ☐ Locating artifacts ☐ Locates and assembles components of artifacts ☐ Establishes chronological sequence of each culture from simpler to more complex and advanced levels ☐ Preserves artifacts for display in museums ☐ Other (specify) ☐
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Acts as consultant on: Problems of social policy for: Lawmakers ☐ Administrators ☐ Educators ☐ Government personnel ☐ Specified historical events ☐ Ethnic problems ☐	Other (specify) ☐
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COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Library Personnel ☐ Archive Personnel ☐ Historical Society Personnel ☐ Educational Personnel ☐ Field Personnel ☐ Correctional Personnel ☐ Judges ☐ Scientific Personnel ☐	Inmates ☐ Groups ☐ Individuals ☐ Industrial Workers ☐ Civic Organizational Personnel ☐ Expedition Personnel ☐ Other (specify) ☐
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EDUCATION AND TRAINING

Record an "X" to indicate speciality area or degree major.

Social Sciences ☐ Social Studies ☐ History ☐ African History ☐ Ancient History ☐ Asian History ☐ European History ☐ Medieval History ☐ Modern History ☐ Nordic History ☐ History and Government ☐ Oriental History ☐ Polynesian History ☐ U.S. History ☐ Biography ☐ Genealogy ☐	Sociology ☐ Sociology and Anthropology ☐ Sociology-Psychology ☐ Correctional Work/Administration ☐ Social Work ☐ Social Service ☐ Anthropology ☐ Archeology ☐ Ethnology ☐ Philology ☐ Etymology ☐ Linguistics ☐ Penology ☐ Rural Sociology ☐ Urban Sociology ☐ Other (specify) ☐
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DEGREE

Record an "X" to indicate degree.

BA	☐	MS	☐
MA	☐	D CRIM	☐
MCL	☐	Ph D	☐
M CRIM	☐		

SUBJECTS AND COURSES

Record an "X" to indicate subjects or courses that develop skills for the occupation.

History:

Western Civilization	☐	United States, Early National Period	☐
History of England and Great Britain	☐	United States, Jacksonian Democracy and the Sectional Crisis	☐
History of the Americas	☐	United States, Civil War and Reconstruction	☐
History of the United States	☐	United States, Emergence of an Industrial Society	☐
History of Asia	☐	United States, The Progressive Period and the Twenties	☐
Ancient Greece	☐	United States, The Great Depression, War, and Its Aftermath	☐
Roman History	☐	History of the Western Movement	☐
Early Middle Ages	☐	History of the South	☐
High Middle Ages	☐	Early California History	☐
History of the Byzantine Empire	☐	Recent California History	☐
The Age of Renaissance	☐	American Urban History	☐
The Age of Reformation	☐	Economic History of the United States	☐
The Age of Absolutism	☐	Social History of the United States	☐
Age of Enlightenment	☐	American Intellectual History	☐
The French Revolution and Napoleon	☐	Diplomatic History of the United States	☐
Europe in the Nineteenth Century	☐	Constitutional History of the United States	☐
Europe Since 1914	☐	History of the Afro-American in the United States	☐
Early Balkan and Near Eastern History	☐	Legal History of the United States	☐
Recent Balkan and Near Eastern History	☐	Imperial China	☐
Northern Europe	☐	Modern China	☐
Social History of Europe Since 1800	☐	Traditional Japanese Civilization	☐
Foundation of Russia	☐	Modern Japan	☐
Modern Russia	☐	The Early History of India	☐
Russian and Soviet Cultural History	☐	Modern India, Religious Thought	☐
Tudor and Stuart England	☐	History of Modern India	☐
Hanoverian England	☐	Intellectual History of Recent Japan	☐
Victorian Britain	☐	The Chinese Revolution	☐
Recent Britain	☐	Africa Before Partition	☐
British Empire and Commonwealth	☐	Modern and Contemporary Africa	☐
Constitutional History of England	☐	Historians and Historiography	☐
Latin American Peoples	☐	The Literature of History	☐
Colonial Latin America	☐	Other (specify)	☐
The Emerging Latin American Nations	☐		
Modern Latin America	☐		
History of Mexico	☐		
The Caribbean Area	☐		
Argentina	☐		
Brazil	☐		
Andean Nations of South America	☐		
United States, Colonial Period	☐		
United States, Age of Revolution	☐		

Sociology:

Principles of Sociology	☐
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SUBJECTS AND COURSES—Continued

Social Trends and Problems ☐
 Elementary Statistics ☐
 Marriage ☐
 The Family ☐
 Sociology of Women ☐
 Social Psychology ☐
 Sociology of Small Groups ☐
 Juvenile Delinquency ☐
 Social Disorganization ☐
 Population and Migration ☐
 Advanced Statistics ☐
 Human Ecology ☐
 Rural-Urban Trends ☐
 Social Stratification ☐
 Social Institutions ☐
 Industrial Sociology ☐
 Sociology of Sexual Behavior ☐
 Sociology of Religion ☐
 Social Control ☐
 Symbolic Behavior ☐
 Criminology ☐
 Penology ☐
 Ethnic Group Relations ☐
 Methods of Sociological Research ☐
 Contemporary Sociological Theory ☐
 Family Life Education ☐
 Sociology of Knowledge ☐
 Research Methods ☐
 Sociological Theory ☐
 Population and Ecological Analysis ☐
 Sociology of the Aging ☐
 Occupational Attitudes and Norms ☐
 Demography of Social Disorganization ☐
 Race Relations ☐
 Social Statistics ☐
 Advanced Social Psychology ☐
 Quantitative Sociology ☐
 Other (specify) ☐

Anthropology:

Introduction to Physical Anthropology ☐

Introduction to Cultural Anthropology ☐
 Introduction to Archeology ☐
 Introduction to Linguistics ☐
 Comparative World Ethnology ☐
 Comparative Social Systems ☐
 Folklore ☐
 Native Peoples of Latin America ☐
 Contemporary Cultures of Latin America ☐
 Peoples of the Pacific ☐
 Native Peoples of the USSR ☐
 Cultures of China and East Asia ☐
 Cultures of India and Southeast Asia ☐
 Cultures of Africa ☐
 Africa and the New World ☐
 Prehistoric Cultures of Europe ☐
 Early Civilizations of the Old World ☐
 Ancient Civilizations of the New World ☐
 Prehistoric Cultures of North America ☐
 Human Evolution ☐
 Human Variation ☐
 Political Anthropology ☐
 Economic Anthropology ☐
 Personality and Culture ☐
 Language and Culture ☐
 Linguistic Anthropology ☐
 The Dynamics of Cultural Change ☐
 Field Methods in Archeology ☐
 Analysis of Interpretation of
 Archeological Data ☐
 Methods in Ethnology and Social
 Anthropology ☐
 Linguistic Methodology in Morphology
 and Syntax ☐
 Methods in Physical Anthropology ☐
 History and Theory of Anthropology ☐
 Foundations of Anthropological
 Knowledge ☐
 Kinship and Social Organization ☐
 Primitive and Peasant Economics
 and Development ☐
 Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines and Equipment:

Earth Moving Equipment:

Bulldozers ☐
 Backhoes ☐
 Motor Patrols ☐
 Motorized Shovels:
 Clamshells ☐
 Bucket Shovels ☐
 Pumps ☐

Hoists ☐
 Winches ☐
 Cameras:
 Motion Picture Cameras ☐
 Still Cameras ☐
 Alidades ☐
 Laboratory Equipment ☐
 Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Tools:

- Spades
- Trowels
- Brushes
- Measuring Tools
- Other (specify)

Work Aids:

Data:

- Survey Data
- Historical Data
- Biographical Data
- Geographical Data
- Genealogical Data
- Zoological Data
- Topographical Data
- Botanical Data
- Prior Archeological Data
- Scientific Data
- Demographic Data
- Industrial Data
- Technological Data
- Criminal Data
- Physical Environment Data
- Other (specify)

Records:

- Birth Records
- Baptismal Records
- Death Records
- Marriage Records
- Archive Records

- Census Records
- Rural Population Records
- Church Records
- Diaries
- Personal Papers
- Wills
- Correspondence
- Court Records
- Other (specify)

Artifacts:

- Animal Fossils
- Human Fossils
- Skeletal Remains
- Parchments
- Scrolls
- Pottery
- Pictorial Artifacts
- Other (specify)

- Published Materials
- Pictorial Materials
- Cataloging Materials
- Adhesives
- Glues
- Preservatives
- Plane Tables
- Rigging Materials
- Precision Measuring Instruments
- Sketches
- Scientific Illustrations
- Other (specify)

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

- | | | | |
|-------------------------------|--------------------------|----------------------------|--------------------------|
| Agriculture | ☐ | Financial | ☐ |
| Commercial: | | Government Service | ☐ |
| Business Service | ☐ | Industrial | ☐ |
| Food and Beverage | ☐ | Insurance | ☐ |
| Lodging Service | ☐ | Legal | ☐ |
| Personal Service | ☐ | Library | ☐ |
| Printing and Publishing | ☐ | Medical Service | ☐ |
| Repair Service | ☐ | Military | ☐ |
| Sales | ☐ | Nonprofit | ☐ |
| Communications | ☐ | Office Service | ☐ |
| Conservation | ☐ | Recreation | ☐ |
| Construction | ☐ | Social Service | ☐ |
| Correctional | ☐ | Subsurface and Space | ☐ |
| Educational | ☐ | Transportation | ☐ |
| Entertainment | ☐ | Utilities | ☐ |
| Exhibition Center | ☐ | Other (specify) | ☐ |

INSTRUMENTS AND APPARATUS MANUFACTURING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with manufacturing instruments, apparatus, devices, and related equipment used for such functional purposes as:

- Analyzing ☐
- Computing ☐
- Controlling ☐
- Counting ☐
- Detecting ☐
- Directing ☐
- Sighting and Viewing ☐
- Measuring:
 - Gaging ☐
 - Metering ☐
- Indicating ☐
- Recording ☐
- Testing ☐
- Timing ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

- Fabricating parts used in manufacture of products ☐
- Assembling:
 - Parts into units or subassemblies ☐
 - Parts, units, subassemblies, and hardware into completed product ☐
- Inspecting:
 - Materials ☐
 - Fabricated parts ☐
 - Assemblies ☐
 - Products ☐
- Testing:
 - Parts, subassemblies, or products ☐
- Calibrating instruments, apparatus, or devices ☐
- Other (specify) ☐

Plans or determines:

- Manpower requirements ☐
- Work schedules ☐
- Production schedules ☐
- Worker schedules ☐
- Worker training activities ☐
- Testing activities ☐
- Inspection activities ☐
- Calibration activities ☐
- Other (specify) ☐

WHAT THE WORKER DOES—Continued

- | | | | |
|--|--------------------------|---|--------------------------|
| Prepares work schedules | ☐ | Material specifications | ☐ |
| Assigns workers to specific duties | ☐ | Machine fabricating operations | |
| Gives work directions to workers concerning | | required | ☐ |
| assigned duties | ☐ | Hand fabricating operations | ☐ |
| Inspects random samples of work for | | Work aids required | ☐ |
| conformance with specifications and | | Subassembly procedures and sequences | ☐ |
| standards | ☐ | Product assembly procedures and | |
| Interprets production orders, specifications, | | sequences | ☐ |
| drawings and technical data for workers | ☐ | Inspection requirements | ☐ |
| Advises workers on methods and procedures | | Testing requirements | ☐ |
| for solving work problems | ☐ | Calibration methods and procedures | ☐ |
| Enforces worker compliance with | | Product rework or repair requirements | ☐ |
| established work practices, regulations, | | Other (specify) | ☐ |
| and safety rules | ☐ | | |
| Evaluates worker performance | ☐ | Sets up machines and equipment for | |
| Recommends personnel actions, such as | | other workers | ☐ |
| promotion, discharge, or disciplinary | | Sets up and operates machines | ☐ |
| actions | ☐ | Controls operation of machines or | |
| Requisitions materials, tools, parts, and | | equipment | ☐ |
| equipment | ☐ | Tends machines or equipment setup by | |
| Keeps production and work records | ☐ | others | ☐ |
| Prepares production reports | ☐ | Other (specify) | ☐ |
| Trains workers in: | | | |
| Setup and operation of machines or | | Obtains machine fixtures, holding devices, | |
| equipment to fabricate or process parts | ☐ | tools, and work aids for required | |
| Subassembly methods and procedures | ☐ | operations | ☐ |
| Inspection methods and procedures | ☐ | Installs, aligns, and secures: | |
| Testing methods and procedures | ☐ | Machine fixtures, holding devices, or | |
| Calibration of instruments and apparatus | ☐ | tools in or onto machine | ☐ |
| Reworking defective materials, parts, and | | Dies or die sets | ☐ |
| assemblies | ☐ | Workpiece in machine or holding | |
| Repairing instruments, apparatus, or | | device | ☐ |
| equipment not meeting specification | ☐ | Machine stops and guides | ☐ |
| Fabricating and assembling prototype | | Tools in toolholders, chucks, or | |
| parts and models of products | ☐ | spindles | ☐ |
| Other (specify) | ☐ | Other (specify) | ☐ |
| | | | |
| Coordinates work activities with | | Moves controls or levers to: | |
| activities of other departments | ☐ | Set machining speeds | ☐ |
| Reads, analyzes, or reviews: | | Set speed of rotation of workpiece or | |
| Product specifications | ☐ | machine | ☐ |
| Production orders | ☐ | Set timers or temperatures for specified | |
| Fabrication specifications | ☐ | operations | ☐ |
| Assembly instructions and specifications | ☐ | Set pressure requirements for press | |
| Blueprints | ☐ | operations | ☐ |
| Engineering drawings or sketches | ☐ | Position tool in relationship to | |
| Operational specifications of products | ☐ | workpiece | ☐ |
| Inspection report | ☐ | Feed tool onto workpiece | ☐ |
| Testing reports | ☐ | Start and stop machine or equipment | ☐ |
| Rework orders | ☐ | Readjust machine or equipment | |
| Salvage procedures | ☐ | operation | ☐ |
| Other (specify) | ☐ | Other (specify) | ☐ |
| | | | |
| Determines from data: | | Lays out on workpiece: | |
| Material requirements | ☐ | Reference lines and points | ☐ |

WHAT THE WORKER DOES—Continued

Location of holes	☐	Inter-related parts in specified	
Dimensional specifications	☐	alignment and relationship to each	
Optical element machining directions	☐	other	☐
Pattern outline	☐	Setting specified clearances between	
Cutting lines	☐	moving parts	☐
Bending and forming lines	☐	Fastening or securing parts in place,	
Contour and profile of part	☐	using:	
Other (specify)	☐	Clamps	☐
		Screws	☐
		Rivets	☐
		Nuts and bolts	☐
		Crimping or staking tools	☐
		Solder	☐
		Brazes	☐
		Welds	☐
		Adhesives	☐
		Plastic Compound	☐
		Other (specify)	☐
		Comparing assembly with sample	
		assembly	☐
		Connecting and securing pins or wires to	
		terminals	☐
		Installing:	
		Gear train	☐
		Subassemblies	☐
		Mechanical units	☐
		Electrical units	☐
		Optical elements	☐
		Electronic elements	☐
		Attaching hands or needle points on	
		dial faces	☐
		Securing cover or housing on unit,	
		assembly or product	☐
		Other (specify)	☐
		Inspects materials, parts, or assemblies	
		for such defects, as:	
		Burrs	☐
		Nicks	☐
		Scratches	☐
		Pitted plating	☐
		Cracks	☐
		Optical power	☐
		Loose connections	☐
		Faulty welds, brazes, or soldering	☐
		Faulty assembly	☐
		Binding of moving parts	☐
		Other (specify)	☐
		Measures parts for conformance with	
		specifications for:	
		Length	☐
		Width	☐
		Height	☐

WHAT THE WORKER DOES—Continued

Expansion of bellows	☐	Computing:	
Contraction of bellows	☐	Differentials in degrees of	
Thickness of coating or plating	☐	temperatures	☐
Other (specify)	☐	Differentials in pressures	☐
		Values of required resistance	☐
Tests part, assembly, or product by:		Adjusting calibration screws	☐
Connecting to testing equipment or		Resetting tension on springs	☐
machine	☐	Adjusting bearings on calibrating arm	☐
Setting controls for specified:		Adding weight to calibrating arm	☐
Temperature	☐	Soldering wire of calibrating arm to	
Current or voltage	☐	bearing	☐
Pressure	☐	Adding required ballast	☐
Vacuum	☐	Bending contacts for specified length	
Speed	☐	of travel	☐
Starting equipment and observing:		Adjusting meshing of gears in gear	
Readings on gages and meters of testing		trains	☐
equipment	☐	Repositioning magnet	☐
Readings of instrument under test	☐	Other (specify)	☐
Action of instrument for specified			
performance	☐	Reworks:	
Instrument for evidence of		Parts to remove defects by:	
malfunctioning	☐	Filing	☐
Instrument for need of calibration	☐	Grinding	☐
Immersing:		Scraping	☐
Part in water to detect leaks	☐	Lapping	☐
Instrument in water of known		Polishing	☐
temperature to insure accuracy of		Burnishing	☐
measurement	☐	Straighting	☐
Instrument in liquid solution of known		Replating	☐
gravity to insure accuracy of reading	☐	Recoating	☐
Records nature of tests and results in		Recoloring	☐
testing log	☐	Assemblies and products by:	
Analyzes test data to determine cause of		Disassembling unit or product	☐
malfunction	☐	Examining parts, connections, and	
Enters cause of defect on rejection tag	☐	assembly	☐
Routes product for rework or salvage		Moving parts to insure freedom of	
of usable parts	☐	movement	☐
Other (specify)	☐	Measuring parts for conformance with	
		dimensional specifications	☐
Calibrates instruments by:		Measuring clearances between parts	☐
Connecting or installing instrument in		Testing continuity of circuitry	
calibrating machine or equipment	☐	between parts	☐
Starting equipment or machine	☐	Removing and replacing defective	
Observing indicator lights and gages on		parts	☐
test panel board	☐	Soldering loose connections	☐
Reading of meters or gages on instrument		Resetting clearances	☐
under test	☐	Reassembling product or unit	☐
Recording:		Other (specify)	☐
Temperatures at which controls or			
contacts react	☐	Records rework activities and type or	
Pressures at which instrument		cause of defect	☐
operates	☐	Routes reworked assembly or product for	
Electrical resistance or other		testing or calibration	☐
characteristic	☐		

WHAT THE WORKER DOES—Continued

Routes rejected products for salvage of
usable parts ☐ Salvages and sorts usable parts ☐
Salvages and sorts usable products ☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Management	☐	Workers	☐
Supervisors	☐	Helpers	☐
Other Supervisors	☐	Laboratory Personnel	☐
Quality Control Personnel	☐	Other (specify)	☐
Engineering Personnel	☐		

EDUCATION AND TRAINING

Record an "X" to indicate education and training requirements.

Elementary	☐	Apprenticeship	☐
High School	☐	Military Schooling	☐
Junior College	☐	On-the-job Training	☐
Vocational School	☐	Other (specify)	☐
Technical School	☐		

SUBJECTS AND COURSES

Record an "X" to indicate subjects and courses that develop a worker's skills.

Related Trade Theory:

Mathematics:

Review and Basic Slide Rule	☐
Basic Rules of Algebra	☐
Solution of Irregularities	☐
Graphing	☐
Remainder Theorem	☐
Slope of a Line	☐
The Derivative	☐
Applications Involving Maxima Minima	☐
Applications of Negative, Fractional and Zero Components	☐
Exponential and Logarithmic Equations	☐
Sequences	☐
Fundamental Principles of Permutations and Combinations	☐
Probability and Quality Control	☐
Functions	☐
Areas	☐
Rates, Derivatives, and Integration	☐
Volumes and Solids	☐
The LaPlace Transformation	☐
Other (specify)	☐

Physics:

Forces and Components	☐
Engineering Characteristics of Common Materials	☐

Rectilinear Motion in a Horizontal Plane	☐
Nonlinear Motion	☐
Work and Energy	☐
Simple Harmonic Motion	☐
Temperatures, Measurements, and Scales	☐
Heat Energy	☐
Transfer of Heat Energy	☐
Thermal Properties of Materials	☐
Gas Flow	☐
Hydrodynamics	☐
Hydrostatics	☐
The Magnetic Field	☐
The Electro-Magnetic Field	☐
Magnetic Properties of Matter	☐
Induced Electromotive Forces	☐
Coulomb's Law	☐
The Electric Field	☐
Electric Potential	☐
Capacitance Properties of Dielectrics	☐
Electrochemistry and Thermoelectricity	☐
Electronics	☐
Elementary Solid State Physics	☐
Sound-Wave Motion	☐
Sound-Vibrating Bodies	☐
The Nature and Propagation of Light	☐
Lenses and Lens Aberrations	☐
Optical Instruments	☐

SUBJECTS AND COURSES—Continued

Mirrors	☐	Psychology and Human Relations	☐
Photoelectric-Photoresistive and Photovoltaic Devices	☐	Numerical Control	☐
Diffraction and Polarization	☐	Analytical Techniques in Systems Control	☐
Other (specify)	☐	Guidance and Control Techniques	☐
Electrical Circuits AC and DC:		Microminiaturization Problems and Techniques	☐
Resistance Calculations-Ohm's Law	☐	Development of Supervisory Capabilities	☐
Series and Parallel Circuits	☐	Other (specify)	☐
Networks	☐	Instrumentation Technology:	
Electric Fields and Capacitance	☐	Mechanical Measuring Principles:	
Magnetic Fields and Inductance	☐	Review of Basic Principles	☐
Meters	☐	Pressure Gages	☐
Sine Wave	☐	Liquid and Gas Flow Measurement	☐
Series Circuits, AC	☐	Temperature Measurements	☐
Parallel Circuits, AC	☐	Humidity Instruments	☐
Polyphase Circuits	☐	Specific Gravity Measurements	☐
Other (specify)	☐	Viscosity Measurements	☐
Electronics:		Other (specify)	☐
Vacuum Tubes	☐	Electrical Measuring Principles:	
Semiconductor Characteristics	☐	Review of Fundamentals	☐
Power Supplies	☐	Electrical Pressure Transducers	☐
Audio Amplifiers	☐	Electrical Flow Devices	☐
Tuning Circuits	☐	Electrical Level Transducers	☐
Radio-Frequency Amplifiers	☐	Electrical Temperature Transducers	☐
Detector Circuits	☐	Potentiometric Devices	☐
Electronic Instruments	☐	Indicating, Recording, and Registering Equipment	☐
Other (specify)	☐	Analytical Instruments	☐
Technical Reporting:		Radiation Type Instruments	☐
Diagnostic Tests	☐	Humidity-Measuring Devices	☐
Technical Sketching	☐	Other (specify)	☐
Dimensional Drawing	☐	Instrument Shop Practices:	
Pictorial Drawing	☐	Safety Rules and Precautions	☐
Electrical and Electronic Symbols	☐	Organization and Function	☐
Instrumentation Symbols	☐	General Classifications of Instruments	☐
Sketch of Simple Instrumentation- Installation	☐	Records Required	☐
Graphical Presentation of Data	☐	Test Fixtures	☐
The Engineering Report	☐	Assembly of Common Mechanical and Pneumatic Instruments	☐
Other (specify)	☐	Performance Tests	☐
Communication skills:		Other (specify)	☐
Sentence Structure	☐	Control Principles and Telemetry:	
Using Resource Materials	☐	What Constitutes a Process	☐
Written Expression	☐	Process Characteristics:	
Talking and Listening	☐	Static Conditions	☐
Improving Reading Efficiency	☐	Kinetic Conditions	☐
Other (specify)	☐	Responses of Components and Systems	☐
General and Industrial Economics	☐	Energy Characteristics of the Process	☐
Industrial Organizations and Institutions	☐	Feedback Control System:	
Facilities, Equipment, and Costs	☐	Closed Loop	☐
Chemistry for Instrumentation	☐	Open Loop	☐

Pneumatic and Hydraulic Controllers

and Final Operators ☐
 Other (specify) ☐

Calibration and Standardization:

Calibration to Laboratory Standards ☐
 Calibration to Plant Standards ☐
 Calibration and Adjustment of:
 Mechanical Instruments ☐
 Pneumatic Instruments ☐

Electrical Instrument:

Pressure ☐
 Temperature ☐
 Flow ☐
 Level ☐
 Pressure Transmitters ☐
 Voltmeters-Ammeters ☐
 Potentiometers ☐
 Portable Instruments ☐
 Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines:

Machine tools:

Lathes ☐
 Milling machines ☐
 Shapers ☐
 Routers ☐
 Drill presses ☐
 Surface grinders ☐

Metal forming machines:

Bending machine ☐
 Brake ☐
 Draw roll machine ☐
 Forming roll ☐

Presses:

Arbor press ☐
 Hydraulic press ☐
 Straightening press ☐
 Punch press ☐
 Stamping press ☐
 Shears ☐

Saws ☐

Pumps ☐

Vacuum pumps ☐

Other (specify) ☐

Soldering iron ☐

Soldering gun ☐

Pipe wrenches ☐

Hammers ☐

Power handtools ☐

Other (specify) ☐

Equipment:

Chemical etching ☐

Heat treating ☐

Tempering ☐

Induction:

 Welding ☐

 Brazing ☐

Scales:

 Beam Scales ☐

 Laboratory scales ☐

Ovens ☐

Furnaces ☐

Welding equipment:

 Flash ☐

 Spot ☐

 Seam ☐

Other (specify) ☐

Tools:

Pliers ☐

Screwdrivers ☐

Wrenches ☐

Files ☐

Scrapers ☐

Tweezers ☐

Wire cutters ☐

Wire strippers ☐

Crimping tools ☐

Staking tools ☐

Scissors ☐

Flaring tools ☐

Flanging tools ☐

Scribers ☐

Work Aids:

Measuring devices:

Balance gage ☐

Center gage ☐

Dial indicator ☐

Feeler gage ☐

Height gage ☐

Plug gage ☐

Surface plate ☐

Thickness gage ☐

Thread gage ☐

Wire gage ☐

Gage blocks:

 Johannsen blocks ☐

 Parallel blocks ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

V-blocks	☐	Ultrasonic test equipment	☐
Micrometers:	☐	Electrical test equipment	☐
Depth micrometer	☐	Electronic test equipment	☐
Flange micrometer	☐	Bridge gages	☐
Inside micrometer	☐	Physical characteristics test equipment	☐
Outside micrometer	☐	Calibrating equipment	☐
Straightedges	☐	Other (specify)	☐
Depth rules	☐		
Optical comparator	☐	Acceptance slips	☐
Meters:	☐	Approval slips	☐
Potentiometer	☐	Rejection slips	☐
Manometer	☐	Blueprints	☐
Tachometer	☐	Engineering drawings	☐
Galvanometer	☐	Inspection reports	☐
Dynamometer	☐	Inspection orders	☐
Frequency meter	☐	Records	☐
Photometer	☐	Production orders	☐
Ammeter	☐	Production reports	☐
Voltmeter	☐	Formulas	☐
Multimeter	☐	Flight simulation equipment	☐
Light meter	☐	Fabricating specifications	☐
Spectrophotometer	☐	Assembly specifications	☐
Spectrometer	☐	Sample assemblies	☐
Densitometer	☐	Holding devices	☐
Thermometer	☐	Jigs	☐
Other (specify)	☐	Fixtures	☐
		Schedules	☐
Loupes	☐	Calibration standards	☐
Oscilloscope	☐	Salvage reports	☐
Binocular microscope	☐	Rework reports	☐
Stress-strain recorder	☐	Other (specify)	☐
Hydraulic test equipment	☐		

PRODUCTS

Record an "X" to indicate use, type, or instrument, apparatus, or equipment.

Instrument, Apparatus, Device Uses:

Aeronautical	☐
Commercial	☐
Dental	☐
Drafting	☐
Engineering	☐
Industrial	☐
Laboratory:	☐
Chemical laboratory	☐
Clinical laboratory	☐
Pathological laboratory	☐
Research laboratory	☐
Testing laboratory	☐
Mathematical	☐
Meteorological	☐
Medical	☐
Navigation	☐
Nautical	☐

Photogrammetry	☐
Scientific	☐
Surgical	☐
Surveying	☐
Other (specify)	☐

Types of Instruments, Apparatus, and Devices:

Accoustical	☐
Electromechanical	☐
Electrical	☐
Electronic	☐
Electrical-electronic	☐
Electro-optical	☐
Electromagnetic	☐
Mechanical	☐
Mechanical-optical	☐
Optical	☐
Pneumatic	☐

PRODUCTS—Continued

Ultrasonic	☐	Revolution controls	☐
Other (specify)	☐	Sequential controls	☐
Analyzing Instruments, Equipment:		Telemetry equipment	☐
Dust sampling and analyzing equipment	☐	Thermostatic controls	☐
Electrical characteristics testing		Thermostats	☐
analyzers:		Timing controls	☐
Internal combustion engines	☐	Other (specify)	☐
Radio apparatus	☐	Counting Instruments, Equipment:	
Electron tube	☐	Electro gamma ray loggers	☐
Gas analyzers	☐	Gieger counters	☐
Nuclear monitoring pulse analyzers	☐	Lineal tallying registers	☐
Optical analysis equipment	☐	Revolution counters	☐
Petroleum analysis equipment	☐	Turnstile counters	☐
Physical properties analysis equipment	☐	Tally registers	☐
Spectrum analyzers	☐	Other (specify)	☐
Telegraph distortion analyzer	☐	Detecting Instruments, Equipment:	
Thermomagnetic oxygen analyzer	☐	Electronic field detection apparatus	☐
Waveform analyzing equipment	☐	Electronic control detection systems	☐
Other (specify)	☐	Fire detection apparatus	☐
Computing Instruments, Equipment:		Infra-red object detection apparatus	☐
Mathematical integrators	☐	Light and heat detection apparatus	☐
Percentage correctors	☐	Mine detectors, electronic	☐
Wind correctors	☐	Magnetic field detectors	☐
Aircraft engine fuel totalizers	☐	Nuclear radiation detectors and monitors	☐
Gun data computers	☐	Personnel dosimetry devices	☐
Slide rules	☐	Probes:	
Other (specify)	☐	Immersion temperature probes	☐
Controlling Instruments:		Temperature probes	☐
Aircraft engine synchronizers	☐	Aerodynamic probes	☐
Air traffic control systems	☐	Radar object detection apparatus	☐
Bimetallic element controls	☐	Radio field strength detectors	☐
Combustion controls	☐	Scintillation detectors	☐
Control receivers	☐	Sensing devices	☐
Control systems	☐	Sound detection equipment	☐
Digital command units	☐	Stress, strain, and flaw detector	
Engine bleeding control cabinets	☐	apparatus	☐
Fire control equipment	☐	Underwater sound detection equipment	☐
Fuel mixture controls	☐	Other (specify)	☐
Gas governors	☐	Directing Instruments, Equipment:	
Gas regulators	☐	Compasses:	
Heat regulators	☐	Magnetic compasses	☐
Hydraulic system controls	☐	Gyrocompasses	☐
Inertial guidance systems	☐	Radio compasses	☐
Liquid flow controls	☐	Radio beams	☐
Liquid level controls	☐	Radio direction finders	☐
Missile control systems	☐	Gun directors	☐
Nuclear reactor controls	☐	Loran equipment	☐
Oxygen regulators	☐	Other (specify)	☐
Pressure regulators:		Indicating Instruments:	
Bellows tube type	☐	Acceleration indicator	☐
Bourdon tube type	☐	Airspeed indicator	☐
Diaphragm type	☐		

PRODUCTS—Continued

Angle of attack indicator	☐
Angle of yaw indicator	☐
Combustion indicator	☐
Drift indicator	☐
Electrical characteristics indicator	☐
Glide slope indicator	☐
Horizontal flight indicator	☐
Hydraulic pressure indicator	☐
Omni bearing indicator	☐
Pictorial position indicator	☐
Physical characteristics indicator	☐
Position indicator:	
Landing gear position	☐
Cowl flap position	☐
Stabilizer position	☐
Radiomagnetic indicator	☐
Rate of climb indicator	☐
Salinity indicator	☐
Other (specify)	☐

Measuring Instruments, Equipment:

Gages:	
Acidity gages	☐
Alkalinity gages	☐
Combustion gages	☐
Density gages	☐
Humidity gages	☐
Liquid level gages	☐
Liquid flow gages	☐
Pressure gages	☐
Temperature gages	☐
Bridge gages:	
Kelvin	☐
Megohm	☐
Vacuum tube	☐
Wheatstone	☐
Other (specify)	☐

Meters:

Accelerometers	☐
Ammeters	☐
Audiometers	☐
Barometers:	
Aneroid	☐
Mercury	☐
Colorimeters	☐
Condensate meters	☐
Decibel meters	☐
Demand meters	☐
Dynamometers	☐
Drift meters	☐
Fathometers	☐
Fuel meters	☐
Gas meters	☐
Galvanometers	☐

Gasoline dispensing meters	☐
Hydrometers	☐
Inclinometers	☐
Integrating meters	☐
Mach meters	☐
Manometers	☐
Moisture density meters	☐
Odometers	☐
Ohmmeters	☐
Phase angle meters	☐
Ph meter	☐
Photometer	☐
Photopitometers	☐
Pitometers	☐
Pitot tubes	☐
Planimeters	☐
Power factor meters	☐
Potentiometers	☐
Pyrometers	☐
Refractometers	☐
Reflectometers	☐
Radio field strength meters	☐
Seisometers	☐
Spectrometers	☐
Speedometers	☐
Tachometers	☐
Thermometers	☐
Titrometers	☐
Turbidimeters	☐
Turbine flow meters	☐
Voltmeters	☐
Watt meters:	
Watt hour meters	☐
Watt hour and demand meters	☐
Watt hour and timeswitch meters	☐
Water meters	☐
Other (specify)	☐

Precision Mechanical Measuring

Instruments:	
Angle rings	☐
Calipers	☐
Dividers	☐
Gage blocks	☐
Micrometers	☐
Optical comparators	☐
Verniers	☐
Surface plates	☐
Other (specify)	☐

Sighting and Viewing Instruments:

Binoculars	☐
Bomb sights	☐
Bore scopes	☐

PRODUCTS—Continued

Chronoscopes	☐	Cystoscopes	☐
Field glasses	☐	Gastrosopes	☐
Gun sights	☐	Ophthalmic:	
Height finders	☐	Trail cases	☐
Microprojectors	☐	Ophthalmometers	☐
Microscopes	☐	Ophthalmoscopes	☐
Optical Interferometers	☐	Corneal microscopes	☐
Periscopes	☐	Slit lamps	☐
Polarioscopes	☐	Muscle exercise apparatus	☐
Range finders	☐	Optometers	☐
Reflectoscopes	☐	Pelvimeters	☐
Shadowgraphs	☐	Speculums	☐
Spectroscopes	☐	Phygomonometer	☐
Spy glasses	☐	Tonometer	☐
Telescopes	☐	Stethoscopes	☐
Other (specify)	☐	Stethographs	☐
Testing Instruments, Apparatus,		Anesthesia apparatus	☐
Equipment:		Anthropometrical apparatus	☐
Aircraft hydraulic control testing		Blood typing equipment	☐
units	☐	Blood transfusion equipment	☐
Coal testing apparatus	☐	Bone drills	☐
Circuit digital testing equipment	☐	Bone rongeurs	☐
Electrical characteristic test equipment:		Forceps	☐
Electrical quantities	☐	Hypodermics	☐
Resistance	☐	Inhalators	☐
Voltage	☐	Surgical:	
Environmental testing equipment	☐	Knives	☐
Electron tube testing equipment	☐	Needle holders	☐
Ignition harness testing equipment	☐	Saws	☐
Ignition testing equipment	☐	Probes	☐
Kinematic testing and measuring		Suture needles	☐
equipment	☐	Operating tables	☐
Physical characteristics testing		Trocars	☐
equipment:		Physician's diagnostic equipment	☐
Abrasion tester	☐	Dental instruments and apparatus	☐
Burst tester	☐	Veterinarian instruments and	
Ductility tester	☐	apparatus	☐
Elongation tester	☐	Other (specify)	☐
Hardness tester	☐	Surveying Instruments:	
Material fatigue tester	☐	Alidades	☐
Shear strength tester	☐	Transits	☐
Tensile strength tester	☐	Levels	☐
Torque tester	☐	Theodolites	☐
Torsion tester	☐	Plumb bobs	☐
Pump testing units	☐	Rods	☐
Microwave testing equipment	☐	Chains	☐
Semiconductor test equipment	☐	Tapes	☐
Sewage testing equipment	☐	Other (specify)	☐
Turntable indicator tester	☐	Laboratory Apparatus and Equipment:	
Other (specify)	☐	Lansen burners	☐
Medical Instruments, Apparatus,		Centrifuges	☐
Equipment:		Furnaces	☐
Bronchoscopes	☐	Flasks	☐

PRODUCTS—Continued

Ovens	☐	Counter measure simulators	☐
Scales	☐	Digital encoders	☐
Incubators	☐	Flight simulators	☐
Distilling equipment	☐	Hydrophones	☐
Colorimetric hydrogen ion equipment	☐	Light and heat emission operating equipment	☐
Laser instruments	☐	Pulsed electron guns	☐
Maser instruments	☐	Railing signaling devices	☐
Laser beam alignment devices	☐	Sound signaling devices	☐
Magnetic idealization generators	☐	Television monitors	☐
Pellicle mirrors	☐	Time decoders	☐
Vacuum pumps	☐	Traffic signals	☐
Standards and calibrating equipment	☐	Transponders	☐
Amplifiers for nuclear reactors	☐	Weapon simulators	☐
Micromanipulators	☐	Chromatographic equipment	☐
Nuclear radiation sample changers	☐	Cinetheodolites	☐
Nuclear radiation scalars	☐	Contour projectors	☐
Other (specify)	☐	Dyna-lens	☐
Miscellaneous Instruments, Apparatus, Equipment:		Electron microscopes	☐
Audio frequency oscillators	☐	Magnifying instruments:	
Radio frequency oscillators	☐	Binocular microscopes	☐
Oscillographs	☐	Loupes	☐
Pulse signal generators	☐	Photomicrographic apparatus	☐
Microwave signal generators	☐	Polarizers	☐
Telephone pressurization units	☐	Prisms	☐
Accelerating wave guide structures	☐	Spectographs	☐
		Other (specify)	☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial:		Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

KNITTING MILL WORK

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates mill activities concerned with manufacturing of:

Knitted:

- Fabrics ☐
- Women's hosiery ☐
- Hose, stockings, and socks ☐
- Outerwear ☐
- Underwear ☐
- Articles other than wearing apparel (specify) ☐

Supervises, and coordinates activities of workers engaged in:

- Setting up, adjusting, and repairing machines and/or equipment ☐
- Operating or controlling machines or equipment to:
 - Process or prepare yarn for knitting operation ☐
 - Knit parts of or complete products ☐
 - Assemble knitted parts into finished product ☐
 - Dye products specified color ☐
 - Finish or convert fabric or product ☐
- Boarding of products ☐
- Labeling or marking products ☐
- Inspecting products ☐
- Reworking defective products ☐
- Pressing, boxing, and/or packaging of products ☐
- Quality control operations ☐
- Other (specify) ☐

Studies, reviews, or analyzes:

- Production schedules ☐
- Material specifications ☐
- Processing specifications ☐
- Fabric specifications ☐
- Product specifications ☐
- Schedules ☐
- Other (specify) ☐

Determines:

- Processing sequences and requirements ☐
- Fiber preparation requirements ☐
- Yarn size, type, texture, and quantity required for each product ☐
- Setup of machines and equipment for manufacturing product ☐
- Knitting machine pattern chains ☐
- Dyeing requirements ☐
- Product finishing or converting operations ☐
- Quality control requirements ☐

WHAT THE WORKER DOES—Continued

Manpower requirements	☐	Offbears materials or products from	☐
Other (specify)	☐	machines or equipment	☐
Prepares:		Other (specify)	☐
Warp pattern sheets	☐	Reads setup instructions for specified	
Machine or equipment setup directions	☐	machine operation	☐
Processing schedules	☐	Determines from instructions:	
Work schedules	☐	Arrangement of pattern plates on chain	☐
Reports	☐	Plate perforations requiring covering	☐
Other (specify)	☐	Gears, cams, buttons, links, or needle	
Assigns workers to specific duties	☐	packs requiring change	☐
Interprets production orders, product		Temperatures, pressures, vacuum setting	☐
specifications, and technical data		Machine settings	☐
for workers	☐	Other (specify)	☐
Gives workers directions for performing		Disassembles and/or removes from machine	
assigned duties	☐	or equipment:	
Advises workers on methods and procedures		Rollers	☐
for solving work problems	☐	Pulleys	☐
Reviews inspection and test reports	☐	Pattern chains	☐
Orders changes in processing operations		Gears and cams	☐
for correcting defects	☐	Beam	☐
Coordinates department activities with		Rolls	☐
those of other departments	☐	Guides	☐
Requisitions materials and supplies	☐	Bars	☐
Trains workers in:		Other (specify)	☐
Setup, adjustment, and maintenance of		Selects specified replacement parts or	
machines and equipment	☐	accessory equipment	☐
Operation of machines and equipment	☐	Installs, aligns, sets clearances, and	
Performing assigned duties	☐	secures parts and/or equipment	☐
Notifies maintenance personnel of needed		Inserts cams, links, buttons, and needle	
machine or equipment repairs	☐	packs in pattern plates or chain	☐
Enforces worker compliance with		Turns setscrews, handwheels, or controls to:	
established:		Obtain:	
Work procedures	☐	Specified clearances between moving	
Company regulations	☐	parts	☐
Safety rules and regulations	☐	Specified spacing of knives on cutting	
Observes workers performing duties for		shaft	☐
compliance with work directions	☐	Specified tension on materials	☐
Keeps processing or production records	☐	Specified pressure on materials	☐
Other (specify)	☐	Regulate:	
Sets up machines or equipment for other		Speed of feed rollers	☐
workers	☐	Operating:	
Sets up and operates machines	☐	Pressures	☐
Operates machines	☐	Vacuums	☐
Controls operation of processing		Temperatures	☐
equipment	☐	Synchronize speed of:	
Tends mill machines, machinery, or		Yarn carriers	☐
equipment	☐	Dividers	☐
Assists in operation of machines or		Needles	☐
equipment	☐	Sinkers	☐
Feeds materials or inprocess products		Machine or equipment units with	
into machines or equipment	☐	other units	☐

WHAT THE WORKER DOES—Continued

Admit:

- Steam in box or heating coils ☐
- Water into mixing tank or drum ☐

Adjust:

- Width of spreaders or tension guides ☐
- Operation of machine or equipment to correct manufacturing defects ☐
- Start or stop machine or equipment operations ☐
- Other (specify) ☐

Threads or pulls yarn, material, or product:

Through:

Onto:

Over:

Under:

Between:

- Drop wires ☐
- Tension devices ☐
- Stop motion devices ☐
- Measuring devices ☐
- Spreading devices ☐
- Needle eyes ☐
- Feed rolls ☐
- Pressure rolls or rollers ☐
- Guides ☐
- Rotary knives ☐
- Arm of machine ☐
- Forms ☐
- Head blocks ☐
- Guide or other bars ☐
- Other (specify) ☐

Positions or places:

- Creel ☐
- Bars or rods for knitting operations or looping operations, as:
 - Transfer bar ☐
 - Picot bar ☐
 - Needle bar ☐
 - Welt bar ☐
 - Welt rod ☐
- Roll of material on shaft, stand, or feed rod ☐
- Tube, bobbin, or cone on takeup or winding roll ☐
- Garment on sized model form ☐
- Hosiery on inspection boards ☐
- Other (specify) ☐

Removes:

- Basting stitches or loose threads ☐
- Garments at end of steaming cycle ☐
- Stains or spots from garments ☐
- Other (specify) ☐

Inspects or examines:

- Yarn in creel for conformance with warp pattern specifications ☐
- Products for conformance with knitting specifications ☐
- Inprocess and finished products for:
 - Knitting defects, as:
 - Holes ☐
 - Runs ☐
 - Uneven selvages ☐
 - Loose threads ☐
 - Mispicks ☐
 - Slub runs ☐
 - Torn threads ☐
 - Dropped stitches ☐
 - Dyeing defects, as:
 - Shaded parts ☐
 - Dye streaks ☐
 - Color variations ☐
 - Looping defects ☐
 - Seaming defects ☐
 - Open seams ☐
 - Twisted straps ☐
 - Misplacement of:
 - Pockets ☐
 - Loops ☐
 - Buttons ☐
 - Stains or dirt on products ☐
- Assembly defects in:
 - Fit and hang of garment, as:
 - Wrinkles ☐
 - Puckers ☐
 - Bulges ☐
 - Positioning of:
 - Fasteners ☐
 - Buttonholes ☐
 - Trimming and decorations ☐
 - Loose buttons or fasteners ☐
- Other (specify) ☐

Marks:

- Position for buttonholes and fasteners on garment ☐
- Knitted garments along pattern for cutting operations ☐
- Defects for:
 - Rework, such as:
 - Mending ☐
 - Darning ☐
 - Repositioning misplaced buttons, pockets, or fasteners ☐
 - Re-looping ☐
 - Cutting out of defects in knitting ☐
- Other (specify) ☐

WHAT THE WORKER DOES—Continued

Tests:

- Textile fibers and yarns for conformance with specifications for:
 - Tensile strength ☐
 - Size ☐
 - Twists per inch ☐
- Solutions for specified:
 - Strength ☐
 - Concentration ☐
- Dyes for conformance with color standards ☐
- Hosiery for:
 - Conformance with quality control standards ☐
 - Obtaining data for establishing quality standards for new types or styles ☐
 - Stretch characteristics of:
 - Welt ☐
 - Knee ☐
 - Ankle ☐
 - Instep ☐
 - Tensile strength at knee ☐
 - Other (specify) ☐

Measures:

- Width of material ☐
- Garments to determine size ☐
- Undyed hose to ascertain if size meets specifications ☐
- Hosiery to determine size ☐
- Other (specify) ☐

Weighs:

- Chemicals and dyes following formula ☐
- Dozen lots of knitted garments ☐
- Other (specify) ☐

Cuts:

- Notches in material to indicate length of front opening ☐
- Defects from material or products ☐
- Loose threads and excess material from products ☐
- Connecting threads between material for garment openings ☐
- Other (specify) ☐

Hand:

- Reworks defects in knitted products ☐
- Ties broken yarn ends together ☐
- Presses pattern outline onto knitted garments parts to mark arm or neck openings ☐

- Crochets decorative designs or trim on knotted products ☐
- Blocks knitted headwear ☐
- Folds products for packaging or boxing ☐
- Stacks:
 - Folded garments between boards ☐
 - Folded garments in trays ☐
- Trucks materials or products within mill ☐
- Sorts products according to size, grade, and style ☐
- Other (specify) ☐

Observes machine or equipment operation for:

- Conformance with operational specifications ☐
- Yarn or thread breaks ☐
- Operating malfunctions ☐
- Need for adjustment ☐
- Exhausted yarn packages ☐
- Other (specify) ☐

Assembles and installs metal chains that

- control knitting machine operations
- Studies specifications of new pattern and sample fabric
- Determines:

- Arrangement of pattern plates on chain ☐
- Perforations in pattern plate requiring covering ☐
- Selects pattern chain links according to pattern diagram ☐
- Marks links according to sequence in chain ☐
- Inserts connecting pins through holes in links to assemble chain ☐
- Installs pattern chain and plates in machine ☐
- Makes trial run on machine to insure knitting meets specifications ☐
- Readjusts cams, gears, or control devices as required ☐
- Other (specify) ☐

Builds boards (forms) ☐

- Measures and cuts canvas to cover wire frame ☐
- Positions and tightens canvas over wire frame and sews it in place ☐
- Sews binding tape at edges to strengthen board ☐
- Other (specify) ☐

WHAT THE WORKER DOES—Continued

Repairs looping machine:

Replaces and alines worn, bent, or broken
 loopers points and needles ☐

Replaces and adjusts:

Clipper blade ☐

Trimmer blade ☐

Changes pulleys and belts, as
 required ☐

Other (specify) ☐

Casts needle or thread guide assemblies:

Selects size and type of mold specified ☐

Positions needle or thread guides in mold
 slots and closes mold ☐

Ladles molten lead into mold opening ☐

Removes assembly after lead solidifies ☐

Cuts excess lead from assembly and
 smooths rough edges ☐

Alines needle and thread guides, using
 gages and handtools ☐

Other (specify) ☐

Replaces, alines, and spaces needles or points in bars:

Secures bar in jig or vise ☐

Loosens and removes clamping plate
 holding needles or points ☐

Removes and replaces defective needles
 or points ☐

Replaces and tightens clamping plate ☐

Alines and spaces needles and points,
 using gages and handtools ☐

Other (specify) ☐

Records:

Test results ☐

Production ☐

Batches of solutions or dyes mixed ☐

Chemicals used in making solutions
 and dyes ☐

Other (specify) ☐

Pushes trays of garments into autoclave ☐

Brushes chalk marks from garments ☐

Fastens end of yarn to empty warp
 beam ☐

Mixes chemical solutions or dyes according
 to formula ☐

Adds chemicals to obtain specified
 strength or color ☐

Counts, folds, and places hose in bag
 for dyeing ☐

Classifies hose to be redyed according
 to size, style, and length ☐

Fills orders of salesmen and customers for
 sample hose ☐

Inserts tissue paper liner in hose ☐

Pairs hose according to grade, color,
 size, and length ☐

Other (specify) ☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Management ☐

Supervisors ☐

Other Supervisors ☐

Machine Operators ☐

Machine Helpers ☐

Workers ☐

Quality Control Personnel ☐

Inspection Personnel ☐

Maintenance Personnel ☐

Other (specify) ☐

EDUCATION AND TRAINING

Record an "X" to indicate education requirements.

Elementary ☐

High School ☐

Junior College ☐

Technical School ☐

Vocational School ☐

Apprenticeship ☐

On-the-job-training ☐

Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate type of machines and equipment, tools, and work aids used.

Type of machines/equipment:

- Automatic ☐
- Continuous operating ☐
- Hand operated ☐
- High speed ☐
- Manually controlled ☐
- Multi-purpose ☐
- Pattern controlled ☐
- Semi-automatic ☐
- Other (specify) ☐

Machines/equipment:

- Autoclave ☐
- Beamer:
 - Cloth beamer ☐
 - Warp beamer ☐
- Bleaching-equipment ☐
- Boarding machine ☐
- Calendering machine ☐
- Clipper machine ☐
- Cloth finishing range ☐
- Conveyor ☐
- Crocheting machine ☐
- Cutting machine:
 - Band cutting machine ☐
 - Bias cutting machine ☐
- Darning machine ☐
- Detacking machine ☐
- Doubling machine ☐
- Dry cleaning machine ☐
- Drying equipment:
 - Loop drier ☐
 - Rotary drier ☐
 - Suction drier ☐
- Dyeing machine:
 - Paddle dyer ☐
 - Rotary dyer ☐
 - Skein yarn dyer ☐
 - Tumbler dyer ☐
- Dye-reeler-machine ☐
- Embossing machine ☐
- Embroidery machine ☐
- Extractor ☐
- Folding machine:
 - Swing folding machine ☐
 - Tubular folding machine ☐
- Hydraulic press ☐
- Kier boiling equipment ☐
- Knitting machine:
 - Circular knitting machine ☐
 - Double-knit knitting machine ☐

- Flat knitting machine ☐
- Jacquard knitting machine ☐
- Link and link knitting machine ☐
- Warp knitting machine ☐
- Looper machine:
 - Garment looper machine ☐
 - Hosiery looper machine ☐
- Mixing machine ☐
- Drum mixer ☐
- Napping machine ☐
- Pressing machine:
 - Hydraulic pressing machine ☐
 - Mangle ☐
 - Roller pressing machine ☐
 - Steam presser ☐
- Rinsing machine ☐
- Rolling machine ☐
- Sewing machine ☐
- Shearing machine ☐
- Soaking machine ☐
- Shrinking equipment ☐
- Spot dyeing and winding machine ☐
- Tentering machine ☐
- Tenter frame ☐
- Trimming machine ☐
- Weight scales:
 - Balance scale ☐
 - Platform scale ☐
- Wool bleaching equipment ☐
- Wool washing machine ☐
- Wool tinting equipment ☐
- Wringing machine ☐
- Winding machine:
 - Bobbin winding machine ☐
 - Rewinding machine ☐
- Other (specify) ☐

Tools:

Handtools:

- Bodkins ☐
- Hooks ☐
- Knives ☐
- Needles:
 - Latch needles ☐
 - Latch-up needles ☐
 - Crochet needles ☐
- Pliers ☐
- Scissors ☐
- Screwdrivers ☐
- Scribers ☐
- Saws ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Wrenches	☐	Crayons	☐
Other (specify)	☐	Pins	☐
Power tools:		Tags	☐
Drills	☐	Fermulas	☐
Grinders	☐	Pencils	☐
Soldering irons	☐	Examining frames	☐
Other (specify)	☐	Laboratory equipment	☐
Work aids:		Measuring instruments:	
Production orders	☐	Rulers	☐
Knitting schedules	☐	Tapes	☐
Product specifications	☐	Squares	☐
Material specifications	☐	Hydrometers	☐
Pattern diagrams	☐	Viscosimeters	☐
Pattern charts	☐	Evenness tester	☐
Forms	☐	Break tester	☐
Head blocks	☐	Twist counter machine	☐
Folding boards	☐	Space gages	☐
Chalk	☐	Macrometers	☐
		Feeler gages	☐
		Other (specify)	☐

PRODUCTS

Record an "X" to indicate type of knit and knitted materials or goods produced.

Type of knit:		Wearing apparel:	
Circular knit	☐	Boys' wearing apparel	☐
Double knit	☐	Children's wearing apparel	☐
Elastic knit	☐	Girls' wearing apparel	☐
Single knit	☐	Infants' wearing apparel	☐
Stretch knit	☐	Men's wearing apparel	☐
Warp knit	☐	Misses' wearing apparel	☐
Other (specify)	☐	Women's wearing apparel	☐
Knitted materials:		Other (specify)	☐
Cloth	☐	Legwear knits:	
Jersey cloth	☐	Full fashion	☐
Fabrics:		Full length	☐
Girdle blank fabric	☐	Knee length	☐
Pile fabric	☐	Seamless	☐
Tricot fabric	☐	Other (specify)	☐
Lace	☐	Anklelets	☐
Netting	☐	Hose	☐
Other (specify)	☐	Panty hose	☐
Knit goods:		Hosiery	☐
Bags	☐	Socks	☐
Bagging:		Stockings	☐
Meat bagging	☐	Stocking slippers	☐
Stockinette	☐	Tights	☐
Curtains	☐	Leotards	☐
Dishcloths	☐	Other (specify)	☐
Shoe linings	☐	Outerwear knits:	
Towels	☐	Bathing suits	☐
Washcloths	☐		

PRODUCTS—Continued

Bathrobes	☐	Skirts	☐
Beachwear	☐	Slacks	☐
Bedjackets	☐	Suits	☐
Blouses	☐	Pants suits	☐
Body stockings	☐	Sweaters	☐
Collar sets	☐	Sweater sets	☐
Cuff sets	☐	Wristlets	☐
Dresses	☐	Other (specify)	☐
Gloves	☐		
Hats	☐	Underwear:	
Headwear	☐	Drawers	☐
Housecoats	☐	Foundation garments	☐
Jerseys	☐	Girdles	☐
Mittens	☐	Panties	☐
Mufflers	☐	Slips	☐
Neckties	☐	Step-ins	☐
Scarfs	☐	Shorts	☐
Shawls	☐	Jockey shorts	☐
Shirts	☐	Undershirts	☐
Shoulderettes	☐	Other (specify)	☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial	☐	Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

LIBRARY WORK

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with:

Operations of a:

- Public library system ☐
- Branch library ☐
- Educational institution library or library system ☐
- Library department ☐
- Special library ☐
- Providing patrons with library services ☐
- Selecting materials for library collections ☐
- Acquisition of selected materials ☐
- Cataloging and classifying acquisitions ☐
- Designing and implementing library programs and special services ☐
- Supervising, training, and guiding of library personnel ☐
- Recruiting, selecting, hiring, and placement of personnel for library ☐
- Analyzing library or system operations and administrative policy and procedures ☐
- Public and community relations ☐
- Preparing and formatting data for computer input ☐
- Day to day library operations ☐
- Other (specify) ☐

- Prepares, justifies, and submits budget for library or library system ☐
- Participates in library building and program planning activities ☐
- Forecasts anticipated needs for expansion of library programs and services ☐
- Controls budgetary expenditures within allotment ☐
- Addresses meetings of library, civic, community, or educational organizations ☐
- Formulates and enforces personnel policy ☐
- Interprets established library policy to educational or library personnel ☐
- Trains library personnel in performing assigned duties ☐
- Gives directions to library personnel regarding technical aspects of duties ☐
- Insures that work performed is carried out according to directions ☐
- Other (specify) ☐

Administrators:

- Library policy and procedures established by trustees or governing board ☐
- Special projects and experiments in new techniques of providing library services ☐
- Services provided by library or library system ☐
- Established program of providing library services ☐
- Library personnel services in accordance with prescribed regulations ☐
- Other (specify) ☐

Plans, develops, and organizes or arranges:

- Special library projects involving promotion of library and outreach services ☐
- Special library programs and services for handicapped or disadvantaged ☐
- Public and community relations programs ☐

WHAT THE WORKER DOES—Continued

- | | | | |
|--|--------------------------|---|--------------------------|
| Technical processes relating to acquisition of materials for library | ☐ | Recommendations submitted by library or other professional personnel | ☐ |
| Layout of physical facilities for library materials and special services | ☐ | Lists of materials selected for acquisition | ☐ |
| Systems and procedures for recording, housing, and maintaining library materials | ☐ | Proposed and planned programs for completeness and conformance with policy and procedures | ☐ |
| Library collections according to subject matter or field of interest | ☐ | Data on reading habits to determine specific needs of library patrons | ☐ |
| Library displays or exhibits for stimulating interest of patrons | ☐ | Other (specify) | ☐ |
| Recruiting programs and placement of professional library staff | ☐ | Advises: | |
| Input data for implementing automated library programs or systems | ☐ | Librarians on material selection for particular needs or uses | ☐ |
| Other (specify) | ☐ | Personnel planning on technical problems and program content | ☐ |
| Consults or confers with: | | Library patrons on services provided by library staff | ☐ |
| Trustees, governing board, and civic groups on methods for improving: | | Branch and central library personnel of school activities having effect on library services | ☐ |
| Library administration | ☐ | Administrative personnel on eligibility requirements for obtaining financial grants | ☐ |
| Library organizations | ☐ | Other (specify) | ☐ |
| Services for patrons | ☐ | Compiles: | |
| Faculty, educational department heads on present and future needs within specified subject area | ☐ | Statistics on acquisition of library materials | ☐ |
| School administrative personnel to coordinate cooperation between school and library | ☐ | Statistical data, population and community growth rates | ☐ |
| Teachers, parents, and civic groups concerning special programs and activities of library | ☐ | Bibliographies and writings for publication | ☐ |
| Administrative library personnel to devise methods for increasing effectiveness and efficiency of library services | ☐ | Lists of library materials for specific purposes or according to field of interest | ☐ |
| Coordinators for schools and libraries to devise most effective methods of serving students | ☐ | Catalog cards for identification of materials and intergration in library catalog | ☐ |
| Library department heads and staff concerning acquisitions of materials | ☐ | Information required for preparation of catalog cards | ☐ |
| Administrative library personnel to give information on availability of financial grants | ☐ | Accession lists and records | ☐ |
| Other (specify) | ☐ | Directories of information on medical: | |
| Analyzes: | | Hospitals and facilities | ☐ |
| Budgetary requests and cost estimates for materials and personnel | ☐ | Teaching institutions | ☐ |
| Administrative policies, procedures, and regulations | ☐ | Licensing requirements | ☐ |
| Proposed building, expansion, and extension plans of library or system | ☐ | Annotations | ☐ |
| | | Data on department activities and expenditures | ☐ |
| | | Other (specify) | ☐ |
| | | Reads or reviews: | |
| | | New publications to recommend selection of materials | ☐ |

WHAT THE WORKER DOES—Continued

- Books, articles, and journals concerning new developments and methods used in education ☐
- Issues of periodicals for making decisions regarding retention or disposal ☐
- Lost material data to determine need of replacement ☐
- Materials for purposes of cataloging and classifying ☐
- Other (specify) ☐
- Conducts:
- Orientation classes in use of library resources and materials ☐
- Staff meeting on activities of library and commenting on proposals ☐
- Surveys of private or other collections for possible library acquisition ☐
- Classes on tours of library to acquaint students with library facilities and services ☐
- Searches of subject matter material for faculty personnel ☐
- Interlibrary loan transactions ☐
- Other (specify) ☐
- Instructs individuals or readers in:
- Use of card catalog and reference files ☐
- Compilation and use of bibliographies ☐
- Research methodology ☐
- Use of reference materials ☐
- Operation and maintenance of machines and other equipment ☐
- Use of special equipment designed for blind or handicapped ☐
- Library policies and procedures ☐
- Other (specify) ☐
- Prepares:
- Budgetary requests for library department or branch ☐
- Brief summaries on materials for use in cataloging and classifying ☐
- Reports on library activities and special services provided ☐
- Reference and bibliographic lists for use by professional or staff personnel ☐
- Special services programs for presentation ☐
- Evaluations of library or library system from collected data ☐
- Abstracts from library materials ☐
- Replies to:
- Mail requests for information or assistance ☐
- Complaints of patrons concerning library services ☐
- Selection lists of materials to be acquired ☐
- Reports of field investigations, personal contacts, and monies collected ☐
- Patient medical records and case histories ☐
- Other (specify) ☐
- Recommends:
- Specific publications or materials for acquisition ☐
- Acquisition of private collections from individuals or organizations ☐
- Reclassification of library jobs based on task evaluation ☐
- Methods of improving organization and administration of library or library system ☐
- Actions to be taken for obtaining eligibility for financial grants or assistance ☐
- Methods and procedures for improving effectiveness of library ☐
- Promotions of library personnel ☐
- Disposition of materials to department heads ☐
- Methods of enlarging book collections ☐
- Other (specify) ☐
- Provides:
- Patrons with reader advisory services ☐
- Patrons with reference services ☐
- Inmates, patients, or staff of institutions with library services ☐
- Handicapped patrons with reading aids and equipment, or special type of library materials ☐
- Library department heads with guidance and supervision ☐
- Patrons with information on library activities, policies, rules, and services ☐
- Doctors with specified medical bibliographies ☐
- Community or civic groups with special program presentations ☐
- Other (specify) ☐
- Selects:
- Subject matter materials in cooperation with faculty ☐
- Vendors providing materials considering such factors as discount allowances and delivery dates ☐

WHAT THE WORKER DOES—Continued

Materials for library or special library collections	☐	Types:	
Classification numbers to be assigned new materials	☐	Orders for materials and supplies	☐
Materials to be repaired, replaced, or discarded according to condition and value	☐	Catalog cards, shelf lists, and other library materials	☐
Other (specify)	☐	Medical case histories and patient records from data supplied by doctors	☐
Evaluates:		Copies:	
Materials for technical, informational, or esthetic qualities	☐	Classification numbers on books	☐
Special equipment according to intended use, quality, and price	☐	Classification numbers onto shelf cards	☐
Materials in specific collections for need of updating or revising	☐	Receives material and compares them with order lists	☐
Performance of library personnel	☐	Replaces books and other library materials on shelves or in files	☐
Educational background and experience of applicants	☐	Charges out loan materials to borrowers and records lending data	☐
Other (specify)	☐	Issues library, identification, or other cards to borrowers	☐
Supervises and coordinates activities of workers in department	☐	Collects fines and overdue materials from borrowers	☐
Assigns workers to specific duties	☐	Receives and records payment of fines and for lost materials	☐
Gives work directions to technical or clerical personnel	☐	Keeps serial and periodical check-in files	☐
Insures that work meets quality and standards of library	☐	Prepares bills and notices for overdue materials	☐
Writes book reviews on materials and new acquisitions	☐	Files:	
Compares list of selected materials with catalog for avoiding duplications	☐	Catalog cards	☐
Circulates list of selected materials for comment by staff	☐	Material orders and removes orders from files when materials are received	☐
Trains library personnel in use of specialized equipment	☐	Stamps or marks library materials with ownership identification	☐
Translates foreign language material	☐	Inventories materials for determining replacement requirements	☐
Appraises rare books or private collections	☐	Tracks returned books to stacks for shelving	☐
		Monitors library exits for insuring borrowed materials have been charged out	☐
		Traces patrons having library materials	☐
		Drives bookmobile to specified locations	☐
		Other (specify)	☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Board of Trustees	☐	Students	☐
Board of Directors	☐	Patients	☐
Governing Body	☐	Inmates	☐
Institution Administrators	☐	Patrons	☐
Library Director	☐	Blind Persons	☐
Other Librarians	☐	Handicapped Persons	☐
Government Personnel	☐	Faculty	☐
Community Groups	☐	Library Employees	☐
Civic Groups	☐	Doctors	☐

COMMUNICATION RESPONSIBILITIES—Continued

Business People	☐	Collectors	☐
Medical Personnel	☐	Children	☐
Business Services Personnel	☐	By Telephone	☐
Maintenance and Repair Personnel	☐	By Correspondence	☐
Association Personnel	☐	By Teletype	☐
Contributors	☐	Other (specify)	☐

EDUCATION AND TRAINING

Record an "X" to indicate education or training required.

Elementary	☐	Technical	☐
High School	☐	Post Graduate Work	☐
Junior College	☐	Doctorate Work	☐
College	☐	Other (specify)	☐

DEGREE

Record an "X" to indicate degree.

AA	☐	MS	☐
BA	☐	PhD	☐
BS	☐	DLS	☐
MA	☐	Other (specify)	☐
MLS	☐		

DEGREE MAJOR

Record an "X" to indicate degree major.

Librarianship	☐	Medical Records Librarian	☐
Library Science	☐	Medical Records Technician	☐
Medical Librarianship	☐	Medical Records Transcriber	☐
Information Science	☐	Other (specify)	☐
Librarian Technical Assistant	☐		

SUBJECTS AND COURSES

Record an "X" to indicate subjects or courses that develop skills for the occupation.

Related Subjects and Courses:		Chemistry	☐
Reading and Composition	☐	Physics	☐
World Literature	☐	Anatomy	☐
English Literature	☐	Physiology	☐
American Literature	☐	History	☐
Introduction to Western Civilization	☐	Language:	
Introduction to Sociology	☐	French	☐
Public Speaking	☐	German	☐
Survey of Art History	☐	Spanish	☐
Business Law	☐	Italian	☐
Principles of Economics	☐	Latin	☐
Report Writing	☐	Russian	☐
Oral Communications	☐	Other (specify)	☐
General Psychology	☐		
Principles of Data Processing	☐	Hygiene	☐
Speech	☐	Psychology	☐

SUBJECTS AND COURSES—Continued

Typing	☐	Basic References	☐
Medical Terminology	☐	Nonbook Materials	☐
Other (specify)	☐	School Library Administration	☐
Librarianship:		Advanced Problems in Technical	
Introduction to Librarianship	☐	Services	☐
Reading Guidance for Young People	☐	Forms and Movements of Publication	☐
Reading Guidance for Children	☐	Development of the Book	☐
History of Books and Printing	☐	The Behavioral Study of Scientific	
Reference Sources and Services	☐	Information Flow	☐
Introductory Cataloging and		Foreign National Bibliography	☐
Classification	☐	Science and Technical Literature	☐
Administration of Libraries	☐	Analysis of Contents	☐
Cataloging and Classification	☐	Introduction to Information Sciences	☐
Bibliography of the Humanities	☐	Current Developments in Information	
Bibliography of the Social Sciences	☐	Sciences	☐
Book Selection	☐	Seminar in Mechanized Documentation	
The Librarian's Reading	☐	Techniques	☐
Intellectual Freedom and Censorship	☐	Seminar in Automatic Data Retrieval	☐
Reading Guidance for Adults	☐	Measures of Retrieval Effectiveness	☐
Bibliography of the:		Law Librarianship	☐
Biomedical Sciences	☐	Introduction to Information Systems	
Physical Sciences	☐	Design	☐
Basic Aspects of Law Librarianship	☐	Library Systems Analysis	☐
Government Publications	☐	Data Processing for Libraries	☐
Library Guidance for Teachers	☐	Survey of Library Automation	☐
The American Public Library	☐	The Librarian and the Society	☐
College and University Libraries	☐	Book Collection for University	
The School Library as a Material		Libraries	☐
Center	☐	School Libraries	☐
Library Services to:		College and University Libraries	☐
Children	☐	Public Library Collections and Services	☐
Young People	☐	Other (specify)	☐
Seminar in School Libraries	☐		
Personnel Administration in Libraries	☐	Library Technical Assistant:	
The Library in the Changing Social		Library Services	☐
Scene	☐	Library Resources	☐
Technical Libraries	☐	Ordering Practices	☐
Contemporary Library Theory and		Circulation Procedures	☐
Practice	☐	Cataloging Techniques	☐
Information Storage and Retrieval	☐	Communications Media	☐
Data Processing in Library Technical		Book Binding and Book Repair	☐
Services	☐	Other (specify)	☐
Automation of Library Processes and			
Procedures	☐	Medical Records Technician:	
Reprography and Graphic Systems	☐	Medical Records Technology	☐
Directed Research	☐	Medical Records Directed Practice	☐
History of Libraries	☐	Seminar in Medical Records	☐
Advanced Bibliography	☐	Introduction to Medical Records	☐
Medical Librarianship	☐	Beginning Medical Records Science	☐
Special Problems in Technical Services	☐	Medical Records Science	☐
Research Methods in Library Sciences	☐	Department Supervisor	☐
Selection of Materials	☐	Other (specify)	☐
Children's Books for School			
Libraries	☐		
Adolescent Books for School Libraries	☐		

ASSOCIATIONS AND ORGANIZATIONS

Record an "X" to indicate affiliation.

American Association of Law Libraries	☐	Association of Cooperative Library Organizations	☐
American Library Association:		Association of Jewish Libraries	☐
American Association of School Libraries	☐	Association of Research Libraries	☐
American Association of State Libraries	☐	Bibliographia Society of America	☐
Association of College and Research Libraries	☐	Catholic Library Association	☐
Association of Hospital and Institutional Libraries	☐	Church and Synagogue Library Association	☐
Public Library Association	☐	Educational Film Library Association	☐
American Merchant Marine Library Association	☐	Film Library Information Council	☐
American Society for Informational Science	☐	Medical Library Association	☐
American Theological Library Association	☐	Music Library Association	☐
Association of American Library Schools	☐	Special Libraries Association	☐
		Theatre Library Association	☐
		Other (specify)	☐

LIBRARIES AND LIBRARY DEPARTMENTS

Record an "X" to indicate type of library or department.

Libraries:		Special Libraries:	
Federal:		Information Sciences Library	☐
Library of Congress	☐	Institutional Library	☐
National Library of Medicine	☐	Industrial Library	☐
National Medical Audio-visual Center	☐	Medical Association Library	☐
National Agricultural Library	☐	Law Library	☐
Library of the Department of:		Aerospace Library	☐
Army	☐	Engineering and Science Library	☐
Navy	☐	Library for the Blind	☐
Airforce	☐	Library for the Handicapped	☐
Interior	☐	Other (specify)	☐
Housing and Urban Development	☐		
Transportation	☐	Library Department:	
Other (specify)	☐	Art	☐
		Research	☐
State Library	☐	Architecture and Urban Planning	☐
County:		Business Administration	☐
Central Library	☐	Biomedical	☐
Branch Library	☐	Chemistry	☐
City:		Education and Psychology	☐
Central Library	☐	Engineering and Mathematical Sciences	☐
Branch Library	☐	English	☐
Municipal Reference Library	☐	Law	☐
College Library	☐	Map	☐
University Library	☐	Document	☐
Hospital Library	☐	Music	☐
Junior College Library	☐	Oriental	☐
Other (specify)	☐	Physics	☐
		Theater Arts	☐

SUBJECTS AND COURSES—Continued

Science and Technology ☐
 Social Sciences ☐
 Philosophy and Religion ☐
 Biological Sciences ☐
 Education ☐
 Children's ☐
 Young Adults ☐
 Fiction ☐
 Extension ☐
 Humanities ☐
 Foreign Language ☐
 History ☐
 Genealogy ☐

Literature ☐
 Serials ☐
 Cataloging ☐
 Acquisitions ☐
 Reserve (limited loan) ☐
 Audiovisual ☐
 Bookbinding and Repair ☐
 Circulation ☐
 Reference ☐
 General Reference ☐
 Special Collections ☐
 Technical Services ☐
 Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines and equipment: ☐
 Information retrieval systems:
 Computer ☐
 Printer ☐
 Terminal ☐
 Viewers ☐
 MEDLARS (Medical library automatic
 retrieval system) ☐
 Microform machines:
 Readers:
 Microfilm ☐
 Microfiche ☐
 Microcard ☐
 Printers:
 Microfilm ☐
 Microfiche ☐
 Microcard ☐
 Projectors:
 Film strip ☐
 Motion picture ☐
 Opaque ☐
 Slide ☐
 Videotape ☐
 Overhead ☐
 Transparency ☐
 Audio equipment:
 Recorders:
 Tape ☐
 Cassette ☐
 Players:
 Tape ☐
 Cassette ☐
 Phonographs:
 Remote control ☐
 Speed control ☐
 Audio duplicating machines:
 Open reel tape duplicator ☐
 Cassette duplicator ☐

Copying machines ☐
 Braille:
 Typers ☐
 Writers ☐
 Computerized book circulation systems ☐
 Call number stamping machines ☐
 Dictaphones ☐
 Photostat machines ☐
 Microfilm camera book charging
 equipment ☐
 Adding machines ☐
 Calculators ☐
 Addressographs ☐
 Hectograph machines ☐
 Mimeograph machines ☐
 Cash Registers ☐
 Tape perforator machines ☐
 Key punch machines ☐
 Typewriters:
 Tape driven ☐
 Manual ☐
 Magnetic Tape Selectric ☐
 Electronic film inspecting equipment ☐
 Electric rotary card files ☐
 Illuminated inspection tables ☐
 Page magnifiers ☐
 Bookbinding Machines and Equipment:
 Collators ☐
 Folding machines ☐
 Sewing machines ☐
 Precision drill presses ☐
 Paper drills ☐
 Stapling machine ☐
 Stitching machine ☐
 Proof press ☐
 Offset:
 Plate making equipment ☐
 Lithographic printing presses ☐

LIBRARIES AND LIBRARY DEPARTMENTS—Continued

Poster printing presses ☐
 Automatic pocket pasting machine ☐
 Teletypewriter book exchange network ☐
 Televisions ☐
 Closed circuit television systems ☐
 Bookmobiles ☐
 Other (specify) ☐

Tools:

Handtools:

Rubber stamps ☐
 Date stamps ☐
 Marking pens ☐
 Scissors ☐
 Staples ☐
 Card sorters ☐
 Tapewriters ☐
 Book repair knives ☐
 Film splicers ☐
 Other (specify) ☐

Power tools:

Electric pencils ☐
 Electric staplers ☐
 Electric pencil sharpeners ☐
 Electric speedy stiters ☐
 Electric erasers ☐
 Other (specify) ☐

Work Aids:

Accession books ☐
 Adhesives and glues ☐
 Binders: ☐
 Cassette ☐
 Lock ☐
 Magazine ☐
 Periodical ☐
 Pamphlet ☐
 Bibliographies and indexes ☐
 Book: ☐
 Carts ☐
 Covers ☐
 Marking boards ☐
 Marking kits ☐
 Marking inks ☐
 Ordering forms ☐
 Pockets ☐
 Date slips ☐

Cards:

Application cards ☐

Borrower cards ☐
 Courtesy cards ☐
 Catalog ☐
 Date ☐
 Overdue ☐
 Reserve ☐
 Hold ☐
 Shelf List ☐
 Cataloging and processing kits ☐
 Book jacket covers ☐
 Date slips ☐
 Atlases ☐
 Dictionaries ☐
 Encyclopedias ☐
 Indexing: ☐
 Guides ☐
 Slips ☐
 Interlibrary loan request forms ☐
 Ink pads ☐
 Library: ☐
 Notices ☐
 Paste ☐
 Mending: ☐
 Tape ☐
 Kits ☐
 Projector screens ☐
 Prismglasses ☐
 Published indices ☐
 Publishers: ☐
 Catalogs ☐
 Book reviews ☐
 Labels: ☐
 Self adhesive ☐
 Call number ☐
 Classification: ☐
 Dewey decimal ☐
 Library of Congress ☐
 Book sprays ☐
 Library furniture ☐
 Cabinets ☐
 Files: ☐
 Princeton files ☐
 Catalog files ☐
 Stack ladders ☐
 Step stools ☐
 Wet book hand presses ☐
 Children's toys and games ☐
 Other (specify) ☐

MATERIALS, PRODUCTS, SUBJECT MATTER, AND SERVICES

Record an "X" to indicate materials, products, subject matter or services specialties.

Material Specialties ☐ Books ☐

MATERIALS, PRODUCTS, SUBJECT MATTER, AND SERVICES—Continued

Reference	☐	Bibliographies	☐
Bibliographies	☐	Catalogs	☐
Fiction	☐	Displays and exhibits	☐
Technical	☐	Translations	☐
Textbooks	☐	Medical records	☐
Research	☐	Book reviews	☐
Braille	☐	Reading lists	☐
Brochures	☐	Publicity releases	☐
Catalogs	☐	Professional publications	☐
Charts	☐	Statistical reports	☐
Documents	☐	Survey reports	☐
Government documents	☐	Library material inventories	☐
House organs	☐	Catalog cards	☐
Journals	☐	Classification cards	☐
Trade journals	☐	Book marks	☐
Professional journals	☐	Order lists	☐
Manuals	☐	Annual reports	☐
Technical	☐	Correspondence	☐
Instructional	☐	Questionnaires	☐
Repair and maintenance	☐	Budgets	☐
Maps	☐	Oral History	☐
Music scores	☐	Other (specify)	☐
Newspapers	☐		
Pamphlets	☐	Subject Matter Specialities:	
Technical publications	☐	Art	☐
Yearbooks	☐	Architecture and Urban Planning	☐
Film strips	☐	Business	☐
Videotapes	☐	Economics	☐
Phonograph records	☐	Biology	☐
Audiotapes	☐	Chemistry	☐
Music tapes	☐	Bio-medicine	☐
Language tapes	☐	Medicine	☐
Teaching tapes	☐	Education	☐
Lecture tapes	☐	Engineering	☐
Serials	☐	Mathematical Sciences	☐
Continuations	☐	Law	☐
Foreign language publications	☐	English literature	☐
Periodicals	☐	Maps and charts	☐
Slides	☐	Documents	☐
Transparencies	☐	Music	☐
Motion pictures	☐	Physics	☐
Pictures	☐	Theater arts	☐
Film loops	☐	Sciences and technology	☐
Microfilms	☐	Social sciences	☐
Microfiches	☐	Biological sciences	☐
Microcards	☐	Education	☐
Cassette tapes	☐	Children's books	☐
Patents	☐	Young adults' books	☐
Literature reprints	☐	Fiction books	☐
Other (specify)	☐	Foreign language books	☐
		History	☐
Product Specialities:		Genealogy	☐
Abstracts	☐	Serials	☐
Accession records and lists	☐	Literature	☐
Annotations	☐	Humanities	☐

MATERIALS, PRODUCTS, SUBJECT MATTER, AND SERVICES—Continued

Physical sciences	☐	Orientation classes	☐
Philosophy and religion	☐	Audiovisual programs	☐
Periodicals	☐	Children's story hours	☐
Serials	☐	Book talks	☐
Other (specify)	☐	Community surveys	☐
Services Specialities:		Film shows	☐
Readers advisory	☐	Book fairs	☐
Reference	☐	Creative dramatics	☐
Children's	☐	Reading programs	☐
Young adults	☐	Outreach activity	☐
Community programs	☐	Book location	☐
Student	☐	Bookmobile	☐
Discussion groups	☐	Circulation	☐
Creative writing	☐	Copying services	☐
Creative media exhibits	☐	Interlibrary loan services	☐
School library surveys	☐	Hold services	☐
Library tours	☐	Reserve book room	☐
		Other (specify)	☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Government Service	☐
Commercial	☐	Industrial	☐
Business Service	☐	Insurance	☐
Food and Beverage	☐	Legal	☐
Lodging Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☒	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐
Financial	☐		

LOGGING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with:

- Logging of trees and overall woods operations ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

- Cruising timber lands, estimating quality and quantity of stands, and developing logging plans ☐
- Clearing brush, piling and burning slash to reduce fire hazards and facilitate logging activity ☐
- Rigging and operating high-lead or other yarding systems ☐
- Felling trees, trimming limbs, and bucking felled trees in specified length logs ☐
- Operating machines and equipment to load logs for transportation to mill ☐
- Unloading and stacking logs, sorting logs into booms, and assembling rafts ☐
- Other (specify) ☐

Studies and reviews:

- Data on topographical characteristics ☐
- Estimates of quantity and quality of trees in stand ☐
- Age and species of trees in stand ☐
- Logging orders ☐
- Site to be logged ☐
- Other (specify) ☐

Plans:

- Manpower requirements for operations ☐
- Work schedules ☐
- Logging operations ☐
- Surveys of timberlands ☐
- Machine and equipment requirements ☐
- Sequence of unloading logs from transportation vehicles ☐
- Other (specify) ☐

Determines:

- Pattern, intensity, and type of survey on timberlands ☐
- Sampling methods to be used in survey ☐
- Organization and complement of cruise party ☐
- Area to be logged ☐
- Best direction for felling trees in order to:
 - Minimize danger of breaks or damage to other trees ☐
 - Facilitate yarding operations ☐
- Logging and yarding system to be used for survey of terrain ☐
- Other (specify) ☐

Prepares:

- Work schedules ☐

WHAT THE WORKER DOES—Continued

- | | | | |
|--|--------------------------|---|--------------------------|
| Logging schedules | ☐ | Hoist, position, and load log on truck | ☐ |
| Estimates, maps, and reports | | Engage or disengage winches | ☐ |
| on timberland surveyed | ☐ | Haul logs to landing area | ☐ |
| Reports on logging methods, efficiency of | | Send choker cables back to yarding area | ☐ |
| operation, and progress of work | ☐ | Control speed of winch drums | ☐ |
| Schedules for burning brush and slash | | Keep mainline taut for raising logs | ☐ |
| depending on weather reports and data | ☐ | Prevent choker cables from snagging on | |
| Other (specify) | ☐ | obstacles | ☐ |
| Assigns workers to specific duties | ☐ | Raise or lower hydraulically operated | |
| Gives work directions concerning: | | jacks on equipment | ☐ |
| Rigging of spar tree or portable tower | ☐ | Raise or lower spar into or from cradle | |
| Notching of anchor stumps | ☐ | on machine | ☐ |
| Placement of guywires and running tackle | ☐ | Extend or retract telescoping section | |
| Dismantling and moving of ground rigging | | of spar | ☐ |
| equipment | ☐ | Pay out, tighten, or reel in guywires | ☐ |
| Location of anchor stumps | ☐ | Other (specify) | ☐ |
| Attaching straps | ☐ | Signals worker to: | |
| Reeving yarding cables through blocks | ☐ | Pull choker free from log | ☐ |
| Trees to be felled or saved | ☐ | Slack or hold lines while equipment is | |
| Direction and sequence of felling trees | ☐ | attached | ☐ |
| Stump heights and by lengths | ☐ | Return rigging to choker setting area | ☐ |
| Other (specify) | ☐ | Hoist rigging to spar tree top | ☐ |
| Selects: | | Conduct load tests on yarding rigging | ☐ |
| Spar trees for attaching high-lead rigging | ☐ | Position truck trailer for loading | |
| Anchor stumps for rigging of guy wires | ☐ | operations | ☐ |
| Landing area of yarding operations | ☐ | Relay operating instructions when: | |
| Placement position of yarding and loading | | Chokers are set and workers are clear | |
| machines | ☐ | of area | ☐ |
| Vantage point for observing yarding | | Logs become snagged during yarding | |
| operations | ☐ | operations | ☐ |
| Trees to be logged and marks them for | | Danger to workers is evident | ☐ |
| cutting | ☐ | Hoist trailer from chassis of logging truck | ☐ |
| Area for burning brush and slash | ☐ | Push logs between frame members of raft | ☐ |
| Logs for loading onto trucks to obtain | | Slacken or take up on choker rigging | ☐ |
| balanced load of specified species and | | Hoist and position log on bunker of truck | ☐ |
| grade | ☐ | Attaches: | |
| Other (specify) | ☐ | Choker around log to be yarded | ☐ |
| Operates machines and equipment to: | | Pass block to tree and reeves cable | |
| Yard logs to landing area | ☐ | through block for hoisting rigging | ☐ |
| Load logs on trucks or other transporting | | Crane hook to log trailer on chassis of | |
| equipment | ☐ | truck | ☐ |
| Unload and stack logs at mill site | ☐ | High-lead rigging and guywires to spar | |
| Transport logs from loading area to mill | ☐ | tree or straps | ☐ |
| Other (specify) | ☐ | Other (specify) | ☐ |
| Moves levers, controls, and pedals on machines to: | | Observes: | |
| Start or stop machine | ☐ | Workers and listens for signals from | |
| Rotate loader on chassis | ☐ | rigging load worker | ☐ |
| Raise or lower tongs or grapple | ☐ | Worker activities for conformance with | |
| Open or close grapple | ☐ | established standards for: | |
| Pull or swing grapple out | ☐ | Quality of work | ☐ |
| Speed up or slow down machine operations | ☐ | Quantity of work | ☐ |

WHAT THE WORKER DOES—Continued

- | | | | |
|--|--------------------------|---|--------------------------|
| Observance of safety rules and practices | ☐ | Inspects, maintains, and repairs rigging and tackle | ☐ |
| Yarding and log loading operations to insure worker compliance with safety and working practices | ☐ | Studies site of stand to be logged and yarded | ☐ |
| Logging operations to: | | Relays orders from workers during yarding operations | ☐ |
| Ensure worker compliance with contract provisions | ☐ | Connects electrical wiring to sending key and yarder signal system | ☐ |
| Prevent loss of lumber from breakage | ☐ | Pays out electrical line until vantage point of observation is reached | ☐ |
| Prevent damage to residual stand of trees | ☐ | Pushes controls on sending key to relay signals | ☐ |
| Other (specify) | ☐ | Sounds emergency signal when accidents occur or unsafe conditions arise | ☐ |
| Confers with supervisory personnel to: | | Assembles, computes, and summarizes survey statistical data | ☐ |
| Ascertain ground rigging requirements | ☐ | Places section marker, cuts blaze in tree, or drives survey stake in ground | ☐ |
| Ascertain data regarding area to be logged | ☐ | Writes field notes and computes plats | ☐ |
| Obtain data on make up of rafts and booms | ☐ | Summarizes data for preparation of maps and property description | ☐ |
| Other (specify) | ☐ | Cruises over specified area in pre-established pattern | ☐ |
| Surveys forest lands and timber stands to: | | Samples stand of trees according to pre-determined techniques | ☐ |
| Obtain estimate of timber in stands | ☐ | Writes field notes listing: | |
| Develop topographical maps and charts | ☐ | Timber species and size | ☐ |
| Locate: | | Outstanding topographical features | ☐ |
| Reference points | ☐ | Existing communication and transportation facilities | ☐ |
| Section lines | ☐ | Brands logs to indicate cutting origin, species, and intended use | ☐ |
| Boundaries | ☐ | Cuts rings around bole of tree and straight line through bark | ☐ |
| Direction and slope of terrain | ☐ | Peels tanbark from tree | ☐ |
| Other (specify) | ☐ | Stacks tanbark to prevent weathering of tannin in bark | ☐ |
| Examines logs to determine their: | | Verifies load manifests to ascertain species of logs | ☐ |
| Grade | ☐ | Schedules sorting and rafting of logs | ☐ |
| Species | ☐ | Separates logs according to size and species | ☐ |
| Diameter | ☐ | Deflects logs into designated bays | ☐ |
| Length | ☐ | Closes bays with chain or cable | ☐ |
| Other (specify) | ☐ | Opens bay and moves designated logs into raft section | ☐ |
| Estimates: | | Drags choker to log being yarded | ☐ |
| Waste of lumber due to shape of tree or defects | ☐ | Passes choker around log and hooks it to bell | ☐ |
| Marketable lumber content of logs | ☐ | Tightens noose and signals worker that choker is set | ☐ |
| Loss of board footage caused by sawing or defects | ☐ | Unhooks chokers from yarding logs | ☐ |
| Other (specify) | ☐ | Pulls end of choker from bell fastener | ☐ |
| Rig blocks, cable, and tackle on spar tree for yarding purposes | ☐ | Pulls choker cable to obtain slack | ☐ |
| Climbs trees to install rigging | ☐ | Clears earth or brush under log to facilitate attaching of choker | ☐ |
| Cuts limbs, knots, and top from trees | ☐ | Stretches free end of choker cable toward tractor runway | ☐ |
| Examines tree top for defects and soundness | ☐ | | |
| Measures diameter of tree top | ☐ | | |
| Changes positions of blocks, as required, during yarding operations | ☐ | | |
| Removes rigging from spar tree upon completion of yarding operations | ☐ | | |

WHAT THE WORKER DOES—Continued

- | | | | |
|--|--------------------------|---|--------------------------|
| Fastens choker and winch cable together with clevis | ☐ | Maneuvers logs into position inside frame | ☐ |
| Saws undercut in bole of tree to fix direction of fall | ☐ | Binds logs into raft with chains | ☐ |
| Saws backcut on opposite side of tree to fell tree | ☐ | Couples trailer to truck | ☐ |
| Inserts and drives wedges in backcut to tip tree in specified direction and prevent binding of saw | ☐ | Directs placement of logs on truck bunkers | ☐ |
| Measures and marks bole of felled trees for cutting into log lengths | ☐ | Releases tongs from logs | ☐ |
| Saws felled trees into logs of specified length | ☐ | Specifies method of piling brush and slash and number of piles | ☐ |
| Places limbs or poles under felled tree to avoid splitting underside | ☐ | Notifies fire officials of scheduled time and location of burning | ☐ |
| Hammers plugs into holes in end of logs | ☐ | Patrols area during burning operations | ☐ |
| Assembles logs into rafts | ☐ | Drives and controls operation of motorboat to: | |
| Bares holes in boom sticks and swifters | ☐ | Pull and push logs | ☐ |
| Threads chain or cable through holes to form raft frame | ☐ | Gather logs into boom | ☐ |
| | | Close log booms | ☐ |
| | | Sort logs according to species and size | ☐ |
| | | Tow boom to mill | ☐ |
| | | Other (specify) | ☐ |

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

- | | | | |
|-------------------------|--------------------------|-------------------------|--------------------------|
| Management | ☐ | Loading personnel | ☐ |
| Supervisors | ☐ | Survey personnel | ☐ |
| Mill personnel | ☐ | Machine operators | ☐ |
| Loggers | ☐ | Truck drivers | ☐ |
| Helpers | ☐ | Other (specify) | ☐ |
| Yarding personnel | ☐ | | |

EDUCATION AND TRAINING

Record an "X" to indicate education and training requirements.

- | | | | |
|----------------------|--------------------------|---------------------------|--------------------------|
| Elementary | ☐ | Vocational School | ☐ |
| High School | ☐ | Technical School | ☐ |
| Junior College | ☐ | On-the-job Training | ☐ |
| College | ☐ | Other (specify) | ☐ |

SUBJECTS AND COURSES

Record an "X" to indicate subjects and courses that develop skills for the occupation.

- | | | | |
|--------------------------------------|--------------------------|--|--------------------------|
| Related Subjects and Courses: | | Elements of Supervision | ☐ |
| Practical Arithmetic | ☐ | Estimating | ☐ |
| Drafting | ☐ | Other (specify) | ☐ |
| Mechanical Drawing | ☐ | | |
| Welding | ☐ | Logging: | |
| Use and Care of Handtools | ☐ | Forest Orientation: | |
| Use and Care of Instruments | ☐ | History | ☐ |
| First Aid | ☐ | Cutting, Felling, Thinning, Bucking, and Terminology | ☐ |
| Fire Prevention and Fighting | ☐ | Insects and Pest Control | ☐ |
| Employment Skills and Benefits | ☐ | Selective Logging | ☐ |
| Human Relations | ☐ | | |

SUBJECTS AND COURSES—Continued

Timber Cruising	☐	Ground Tackle Overhauling	☐
Sealing Logs and Log Market	☐	Standing and Running Rigging	
Planting, Seeding, and Conservation	☐	Overhaul	☐
Forest Surveying:		Inspection of Rigging Gear	☐
Basic Elements of Forest Surveying	☐	Load Testing	☐
Photographic Interpretation	☐	Cable Preserving	☐
Surveying Tapes and Chains:		Logging Equipment Operation:	
Taping	☐	Engine Oil Check	☐
Metallic Tapes	☐	Cooling System Check	☐
Abney Level	☐	Air Filter Check	☐
Plumb Bob	☐	Battery Check	☐
Staff Compass	☐	Lubrication	☐
Leveling:		Visual Inspection of Equipment:	
Levels	☐	Loose or Missing Bolts	☐
Leveling Methods	☐	Broken Parts	☐
Timber Harvesting:		Points of Wear	☐
Forest Road Engineering	☐	Engine Starting Procedures	☐
Harvesting Methods and Planning		Checking Equipment While Operating	☐
Procedures	☐	Shut Down Procedures	☐
Logging Forestry:		Logging Equipment Maintenance:	
Forest Safety	☐	Study of Lubrication and Its	
Study of Trees:		Importance	☐
Conifers, Types and Uses	☐	Nuts and Bolts	☐
Deciduous, Types and Uses	☐	Cutting Torch	☐
Introduction to Logging Handtools	☐	Trouble Shooting	☐
Woods Terminology	☐	Ignition	☐
Falling and Bucking	☐	Starting Motor	☐
Selective Logging	☐	Generator	☐
Logging Construction	☐	Carburetor and Gas	☐
Yarding	☐	Exhaust	☐
The Landing	☐	Motor Overhaul	☐
Loading	☐	Transmission	☐
Reloading	☐	Rear End Differential	☐
Forest Engineering:		Frames	☐
Logging Methods	☐	Tires	☐
Selection of Landings and Settings	☐	Batteries	☐
Logging Cost Control	☐	Diesel Motors	☐
Topography	☐	Crawlers	☐
Map Reading	☐	Brakes	☐
Soils and Compaction	☐	Front Ends	☐
Use of Engineering Instruments	☐	Lighting System	☐
Rigging:		Other (specify)	☐
Wire Rope Splicing	☐		

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Types of machines:

Console controlled	☐
Manually operated	☐
Remote controlled	☐
Other (specify)	☐

Machines:

Log loading machines:

Dip-stick boom loader	☐
Hayrack loader	☐
Heel-boom-shovel loader	☐
Grapple-and-power-tong loader	☐
Other (specify)	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Yarding machines:

- Balloon suspended yarders
- Mobile tower yarders
- High-load yarders
- Skyline yarders
- Radio-controlled-carriage yarders
- Tractor yarders
- Other (specify)

- Hand saw
- Screw drivers
- Other (specify)

- Power handtools
- Chain saw
- Other (specify)

Equipment:

- Electric sending key
- Radio transmitter
- Walkie-talkie
- Other (specify)

Work Aids:

Surveying instruments:

- Transit
- Alidade
- Drafting instruments
- Blocks
- Cables
- Guy wires
- Climbing spurs
- Safety belts
- Survey reports
- Logging schedules
- Portable towers
- Mill orders
- Clevises
- Tongs
- Logging reports
- Caulk boots
- Maps
- Charts
- Measuring tapes
- Scales
- Cutting schedules
- Other (specify)

Tools:

Handtools:

- Axes
- Axes
- Crowbars
- Hammers
- Hatchets
- Marlin spikes
- Peavies
- Pikes
- Pickaroons
- Canthooks
- Shovels
- Wrenches
- Pickaxes
- Mauls
- Sledges
- Cross-cut saws
- Branding hammer
- Cable splicing tools

PRODUCTS AND SERVICES

Record an "X" to indicate products or services.

Products:

Bolts:

- Handle
- Heading
- Shingle
- Stave

Burls

Crotches

Driving timber

Excelsior stock

Last blocks

Logs:

- Softwood logs

Hardwood logs

Veneer logs

Peeler logs

Skidding logs

Piling

Poles

Posts

Pickets and railing

Rails

Stumps

Ties

Wheelstock

Other (specify)

PRODUCTS AND SERVICES—Continued

Services: ☐
 Logging ☐ Pulpwood cutting ☐
 Pole cutting ☐ Other (specify) ☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial:		Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personnel Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

PAPER AND PAPERBOARD CONVERTING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with:

- Die cutting paper and paperboard for the trade ☐
- Manufacturing from purchased materials:
 - Paper goods ☐
 - Pulp goods ☐
 - Fiber products ☐
 - Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

- Setting up, operating, or feeding, processing machines or equipment ☐
- Converting purchased materials into:
 - Die-cut paper products ☐
 - Cardboard ☐
 - Coated, glazed, or other type of surface, processed paper product ☐
 - Envelopes ☐
 - Bags of all types, except textile ☐
 - Pressed and molded pulp goods ☐
 - Sanitary paper products ☐
 - Stationery, tablets, and related items ☐
 - Allied or miscellaneous paper products ☐
 - Paperboard boxes ☐
 - Corrugated and solid fiber boxes ☐
 - Sanitary food containers ☐
 - Fiber cans, drums, tubes, and similiar fiber or paperboard products ☐
 - Other (specify) ☐

Plans:

- Manpower requirements ☐
- Work schedules ☐
- Production procedures ☐
- Machine and equipment requirements ☐
- Work training requirements ☐
- Inspection methods and procedures ☐
- Other (specify) ☐

Reads or reviews:

- Product specifications ☐
- Production schedules ☐
- Material specifications ☐
- Laboratory analyses and test reports ☐
- Processing schedules ☐
- Other (specify) ☐

WHAT THE WORKER DOES—Continued

- | | | | |
|--|--------------------------|--|--------------------------|
| Prepares work and worker schedules | ☐ | Offbears materials or products from | ☐ |
| Assigns workers to specific duties | ☐ | machines or equipment | ☐ |
| Interprets manufacturing orders, specifications, and technical data for workers | ☐ | Other (specify) | ☐ |
| Inspects products for conformance with specifications | ☐ | Installs, aligns, and secures: | |
| Gives workers work directions concerning assigned duties | ☐ | Guides | ☐ |
| Advises workers on methods and procedures for solving work problems | ☐ | Stops | ☐ |
| Orders changes in processing or manufacturing procedures | ☐ | Gears | ☐ |
| Enforces worker compliance with established work procedures, regulations, and safety rules | ☐ | Plungers | ☐ |
| Requisitions materials, tools, and equipment | ☐ | Rolls | ☐ |
| Notifies maintenance personnel of repair and maintenance requirements | ☐ | Sawblades | ☐ |
| Keeps processing, production, and manufacturing records | ☐ | Dies | ☐ |
| Prepares activity and production reports | ☐ | Cutters | ☐ |
| Other (specify) | ☐ | Perforators | ☐ |
| Coordinates: | | Printing attachments | ☐ |
| Department activities with activities of other departments | ☐ | Other (specify) | ☐ |
| Worker activities to obtain optimum production | ☐ | Attaches or laps | ☐ |
| Other (specify) | ☐ | End of material onto rewinder | ☐ |
| Trains workers in: | | Turns handwheels or moves levers or controls to: | |
| Setup of machines and equipment | ☐ | Set machine stops and guides | ☐ |
| Operation of machines | ☐ | Adjust: | |
| Controlling equipment | ☐ | Position of forming bar | ☐ |
| Performing assigned duties | ☐ | Space between rolls | ☐ |
| Other (specify) | ☐ | Flow from glue regulator | ☐ |
| Determines: | | Tension on pressure rolls | ☐ |
| Material requirements | ☐ | Tension on material | ☐ |
| Processing sequences | ☐ | Material feed guides | ☐ |
| Setup of machines and equipment | ☐ | Start machine | ☐ |
| Adjustments required to machines and equipment | ☐ | Regulate temperature of processing equipment | ☐ |
| Other (specify) | ☐ | Charge material into equipment tanks | ☐ |
| Sets up machines or equipment for other workers | ☐ | Meter materials into equipment | ☐ |
| Sets up and operates machines | ☐ | Synchronize speed of: | |
| Operates machines | ☐ | Gluing and coating rolls | ☐ |
| Controls operation of equipment | ☐ | Machine rolls with feed speed of materials | ☐ |
| Tends pre-setup machines or equipment | ☐ | Machine operation to obtain and insure uniform material: | |
| Assists in operation of machines or equipment | ☐ | Cutting | ☐ |
| Feeds materials into machines or equipment | ☐ | Slitting | ☐ |
| | | Folding | ☐ |
| | | Gluing | ☐ |
| | | Sealing | ☐ |
| | | Stop machine | ☐ |
| | | Other (specify) | ☐ |
| | | Observes or monitors: | |
| | | Counters | ☐ |
| | | Gages | ☐ |
| | | Operation of machine or equipment | ☐ |
| | | Other (specify) | ☐ |

WHAT THE WORKER DOES—Continued

Inspects products for conformance with manufacturing specifications: Examines in-process and final products for defects, such as: Blisters ☐ Wrinkles ☐ Spots: Glue spots ☐ Dirt ☐ Cocked edges ☐ Imperfect folding or scaling ☐ Printing overlaps and clarity ☐ Color distortions ☐ Measures dimensions ☐ Sorts defective products for salvaging ☐ Other (specify) ☐ Tests samples of products for: Burst resistance ☐ Crush resistance ☐ Tear resistance ☐ Conformance with customer specifications ☐ Coating weight by: Weighing coated and uncoated material ☐ Other (specify) ☐ Estimates manufacturing costs for production of paper goods ☐ Records on forms: Inspection findings ☐ Test results ☐	Maintenance and repair activities ☐ Material expenditures ☐ Other (specify) ☐ Repairs and maintains paper working machines and equipment: Observes machine in operation to locate cause of malfunction ☐ Disassembles machine ☐ Examines parts for broken or excessive worn components ☐ Replaces defective parts ☐ Reassembles machine ☐ Other (specify) ☐ Operates machine in trial run to verify setup: Makes adjustments to obtain specified operational performance ☐ Gives operator of machine operational directions ☐ Other (specify) ☐ Positions materials against stops or guides ☐ Mixes coatings or adhesives according to formula ☐ Dumps mixed materials into hopper or tank ☐ Assembles paper goods products manually ☐ Constructs steel die rules ☐ Mounts rubber dies on fiberboard mats ☐ Other (specify) ☐
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COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Management ☐ Superintendent ☐ Supervisors ☐ Other Supervisors ☐ Operator ☐	Helpers ☐ Workers ☐ Quality Control Personnel ☐ Other (specify) ☐
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EDUCATION AND TRAINING

Record an "X" to indicate education and training requirements.

Elementary ☐ High School ☐ Junior College ☐ Vocational School ☐	Technical School ☐ On-the-job Training ☐ Other (specify) ☐
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SUBJECTS AND COURSES

Record an "X" to indicate subjects and courses that develop worker skills.

Subjects and courses:

- Practical Arithmetic ☐
- Chemistry ☐
- Coated Papers ☐
- Paper-Plastic Combinations ☐
- Converting Operations ☐

- Use and Care of Handtools ☐
- Use and Care of Paper-working Machines ☐
- Machine Operations ☐
- Elements of Supervision ☐
- Human Relations ☐
- Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machine types:

- Automatic ☐
- Manually controlled ☐
- Multi-purpose ☐
- Semi-automatic ☐
- Other (specify) ☐

Machines:

- Apple-liner machine ☐
- Bag machine:
 - Cellophane bag machine ☐
 - Polyethylene bag machine ☐
 - Waxed bag machine ☐
- Bar-creaser machine ☐
- Bender machine ☐
- Book-jacket-cover machine ☐
- Box lining machine ☐
- Capping machine ☐
- Carton forming machine ☐
- Convolute tube winder machine ☐
- Corner cutting machine:
 - Double-corner-cutting machine ☐
 - Single-corner-cutting machine ☐
- Corrugator machine:
 - Board-lining machine ☐
 - Double-facing-corrugating machine ☐
 - Single-facing-corrugating machine ☐
- Crimping machine ☐
- Curling machine ☐
- Cutting-and-creasing press ☐
- Cutting machine ☐
- Cutoff machine ☐
- Domer machine ☐
- Drill-punch machine ☐
- Embossing machine ☐
- Embossograph ☐
- Envelope machine:
 - Plunger machine ☐
 - Rotary-envelope-machine ☐
 - Side-seaming-folding-machine ☐
 - Web folding machine ☐

Ending machine:

- Double-ending machine ☐
- Single-ending machine ☐
- Extension-edger machine ☐
- Folding machine:
 - Double fold machine ☐
 - Folded towel machine ☐
 - Napkin machine ☐
 - Single fold machine ☐
- Four-corner-stayer machine ☐
- Gluing machine ☐
- Gummed-paper press ☐
- Knotting machine ☐
- Labeling machine ☐
- Lace-paper-press ☐
- Laundry-bag-punch-machine ☐
- Layboy ☐
- Panel machine ☐
- Paper cone machine ☐
- Paper core machine ☐
- Paper cup machine ☐
- Paper reel machine ☐
- Partition machine ☐
- Patch machine ☐
- Punchboard filling machine ☐
- Ribbon banking machine ☐
- Rewinder machine ☐
- Ring making machine ☐
- Roll reclaimer machine ☐
- Ruf spooling machine ☐
- Scoring machine:
 - Double scoring machine ☐
 - Single scoring machine ☐
- Sealing machine ☐
- Shot tube machine ☐
- Slitter-scissor-cutoff machine:
 - Slitter-and-cutter machine ☐
 - Slitter-cutoff machine ☐
- Slitting machine ☐
- Slotter machine ☐
- Spiral-tubewinder machine ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Stitcher machine	☐	Pasting equipment	☐
Stringing machine	☐	Driers	☐
String top sealer machine	☐	Drying cabinets	☐
Stripping machine	☐	Strap making machines	☐
Tape fastener machine	☐	Supercalenders	☐
Tag machine	☐	Waxing equipment	☐
Tightening machine	☐	Weight scales	☐
Tube machine	☐	Laboratory scales	☐
Valving machine	☐	Other (specify)	☐
Combination valving and sewing machine	☐		
Wrapping machine	☐	Work Aids:	
Other (specify)	☐	Charts	☐
		Forms:	
Tools:		Inspection forms	☐
Handtools:		Production forms	☐
Screwdrivers	☐	Test report forms	☐
Wrenches	☐	Measuring devices:	
Bars	☐	Templates	☐
Hammers	☐	Patterns	☐
Pliers	☐	Tape measures	☐
Shears	☐	Rules	☐
Mauls	☐	Compasses	☐
Files	☐	Calipers	☐
Other (specify)	☐	Micrometers	☐
		Automatic micrometers	☐
Power handtools:		Specifications	☐
Impact wrenches	☐	Diagrams	☐
Power screwdrivers	☐	Tables	☐
Other (specify)	☐	Marking devices:	
		Pencils	☐
Equipment:		Scribes	☐
Coating equipment	☐	Schedules	☐
Combiner machines:		Test equipment:	
Laminating equipment	☐	Mullen burst tester	☐
		Crush tester	☐

PRODUCTS

Record an "X" to indicate type, base material used, and product manufactured.

Type of product:		Waxed	☐
Coated	☐	Other (specify)	☐
Corrugated	☐		
Die-cut	☐	Type of base material:	
Embossed	☐	Cardboard	☐
Enameled	☐	Cellophane	☐
Glazed	☐	Chipboard	☐
Gummed	☐	Fiber:	
Impregnated	☐	Fiber and metal edged	☐
Laminated	☐	Fiber and metal ended	☐
Molded	☐	Fiberboard	☐
Oiled	☐	Glassine	☐
Pasted	☐	Masonite	☐
Pressed	☐	Paper:	
Saturated	☐	Paper and cloth lines	☐
Vulcanized	☐	Paper and cloth based	☐

PRODUCTS—Continued

Paperboard	☐	Display items	☐
Pulp	☐	Doillies	☐
Other (specify)	☐	Drinking straws	☐
Product:		Drums	☐
Bags:		Egg cartons	☐
Cement bags	☐	Egg cases:	
Flour bags	☐	Fillers	☐
Frozen food bags	☐	Flats	☐
Garment bags	☐	Envelopes	☐
Garment storage bags	☐	Excelsior	☐
Merchandise bags	☐	Eyelets	☐
Mothproof bags	☐	Fancy paper	☐
Produce bags	☐	Flypaper	☐
Shipping bags	☐	Foilboard	☐
Bobbins	☐	Folders:	
Book paper	☐	File folders	☐
Bottles	☐	Manila folders	☐
Bottle tops and caps	☐	Foundations and cutouts	☐
Boxes:		Fuel cell forms	☐
Filing boxes	☐	Gift wrappers	☐
Folding boxes	☐	Hampers	☐
Newsboard boxes	☐	Handkerchief	☐
Paperboard backs for packages	☐	Honeycomb:	
Set-up paper board boxes	☐	Cores	☐
Bread wrappers	☐	Boards	☐
Building board	☐	Insulating:	
Building paper	☐	Batts	☐
Tar paper	☐	Blankets	☐
Candelabra tubes	☐	Fills	☐
Cans	☐	Labels (unprinted)	☐
Cards:		Letters	☐
File cards	☐	Lining paper	☐
Index cards	☐	Litmus paper	☐
Jacquard cards	☐	Mailing:	
Jewelers' cards	☐	Cases	☐
Tabulating cards	☐	Tubes	☐
Cartons	☐	Masking tape	☐
Cases	☐	Memorandum books	☐
Cleaning tissues	☐	Milk filter disks	☐
Cones	☐	Napkins	☐
Confetti	☐	Newsboard	☐
Condenser paper	☐	Newaprint:	
Conduits	☐	Pads	☐
Containers:		Tablets	☐
Liquid food containers	☐	Notebooks	☐
Milk containers	☐	Pads	☐
Cores	☐	Pails	☐
Crepe paper	☐	Pallets	☐
Crepe paper products	☐	Pans and voids	☐
Cups	☐	Paper plates	☐
Drinking cups	☐	Paper wrappers	☐
Decorated wallboard	☐	Papeteries	☐
Desk pads	☐	Papier mache:	
Dishes	☐	False faces	☐
		Halloween lanterns	☐

PRODUCTS—Continued

Masks	☐	Heavy duty shipping sacks	☐
Novelties	☐	Sanitary napkins	☐
Partitions	☐	Soap impregnated paper	☐
Photograph	☐	Sheets	☐
Folders	☐	Spools	☐
Mats	☐	Spoons	☐
Mounts	☐	Stencilboard	☐
Panels and cutouts	☐	Tablets	☐
Patterns	☐	Tags	☐
Pipe	☐	Tapes	☐
Pipefittings	☐	Adhesive tapes	☐
Pressure sensitive tape	☐	Thermoplastic covered paper	☐
Premoistened towelettes	☐	Toilet paper	☐
Punchboards	☐	Towels	☐
Reels	☐	Transfer papers:	
Textile reels	☐	Gold transfer paper	☐
Ribbons	☐	Silver transfer paper	☐
Ribbon blocks	☐	Utensils	☐
Rolls:		Wallpaper	☐
Adding machine rolls	☐	Wall tile	☐
Telegraph tape rolls	☐	Wash cloths	☐
Teletype paper rolls	☐	Wastebaskets	☐
Sacks:		Wrapping paper	☐
Multi-wall sacks	☐	Writing paper	☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial	☐	Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

PETROLEUM AND NATURAL GAS EXPLORATION

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Plans, directs, and coordinates:

Research activities to develop:

- Improved methods and instruments for use in petroleum exploration ☐
- New methods and techniques for improving drilling and production operations ☐

Engineering studies to determine:

- Need for new or improved tool design ☐
- Methods for improving well production ☐
- Geological studies and explorations of earth formations to locate gas or oil deposits ☐
- Geophysical surveys and prospecting operations to locate gas and oil deposits ☐
- Other (specify) ☐

Supervises and coordinates activities of, workers engaged in:

- Setting up and operating instruments and equipment at exploration site ☐
- Computing data on subsurface rock strata from instrument readings ☐
- Obtaining data on competitors oil and gas exploration and development activities ☐
- Mapping exploration and production areas of company ☐
- Conducting research studies ☐
- Building or fabricating new tools, equipment, or instruments ☐
- Other (specify) ☐

Plans:

- Use of directional drilling techniques and tools ☐
- Methods of drilling to:
 - Maintain verticality of bore hole ☐
 - Plug and redrill crooked holes ☐
 - Drill to oil bearing strata not located below drilling rig ☐
- Research programs ☐
- Prospecting activities ☐
- Other (specify) ☐

Determines:

- Area of geophysical prospecting in which to conduct research ☐
- Desirable location for exploratory drilling operations ☐
- Potential productivity of gas or oil in formation ☐
- Mineral content and physical characteristics of samples ☐
- Hydrocarbon content in samples ☐
- Exact time of reception of sound waves ☐
- Elevations of terrain ☐
- Characteristics of terrain ☐
- Other (specify) ☐

Directs:

- Preparation of charts or profiles from compiled data ☐

WHAT THE WORKER DOES—Continued

- | | | | |
|--|--------------------------|--|--------------------------|
| Crews in drilling shallow exploratory boreholes | ☐ | Subsurface surveys | ☐ |
| Collection of cores, cuttings, and fluid samples for analysis | ☐ | Graphs | ☐ |
| Laying out, setting up, and connecting of: Recording devices and equipment | ☐ | Data to reveal substructures likely to contain petroleum deposits | ☐ |
| Cables | ☐ | Other (specify) | ☐ |
| Electrodes | ☐ | Records data from observations | ☐ |
| Instrument panels | ☐ | Verifies accuracy of computations | ☐ |
| Positioning of instruments | ☐ | Cleans cores or breaks off outside surfaces to remove drilling mud | ☐ |
| Shooting of explosives in shot hole | ☐ | Examines cores under ultraviolet light for presence of oil | ☐ |
| Setting up of telephone or short-wave communications equipments | ☐ | Heats cores to drive off vapors and measures volume of condensates | ☐ |
| Changes in methods and procedures | ☐ | Studies well logs | ☐ |
| Mapping of areas | ☐ | Examines aerial photographs | ☐ |
| Other (specify) | ☐ | Estimates oil reserves in proven or prospective fields | ☐ |
| Initiates and directs experiments to: Perfect prospecting procedures | ☐ | Measures: | |
| Explore possibility of new theories | ☐ | Resistance of earth formations to electrical charge | ☐ |
| Develop new or improved prospecting instruments | ☐ | Sonar, electrical, or radioactive characteristics of boreholes | ☐ |
| Other (specify) | ☐ | Dimension and direction of borehole | ☐ |
| Computes or calculates: | | Inclination of geological strata | ☐ |
| Data on variations in: | | Other (specify) | ☐ |
| Gravity pull | ☐ | Consults with: | |
| Resistivity to electrical charges | ☐ | Management personnel | ☐ |
| Magnetic attraction of different earth formations | ☐ | Field personnel | ☐ |
| Differences in readings at base reference points and other locations | ☐ | Field laboratory personnel | ☐ |
| Time intervals of sound waves from data | ☐ | Other (specify) | ☐ |
| Inclination of borehole from data | ☐ | Drives truck to transport equipment and instruments to work site | ☐ |
| Variations in physical forces at various locations | ☐ | Unloads equipment, instruments, and explosives | ☐ |
| Other (specify) | ☐ | Guides drill pipe, casings, or instruments into hole | ☐ |
| Evaluates: | | Loads shot hole with explosives | ☐ |
| Observations | ☐ | Tamps charge of explosives in hole, using sand or water | ☐ |
| Recordings | ☐ | Moves controls to: | |
| Results of geophysical surveys | ☐ | Set off explosive charge | ☐ |
| Other (specify) | ☐ | Send electrical current through electrodes into earth | ☐ |
| Interprets: | | Start recording instruments when they reach bottom of hole | ☐ |
| Seismograms for isolating individual sound waves | ☐ | Other (specify) | ☐ |
| Findings to evaluate productive potential of formation | ☐ | Adjusts instruments to: | |
| Mud analysis logs for professional personnel | ☐ | Eliminate electrical interference from earth's currents | ☐ |
| Data from: | | Eliminate weather conditions | ☐ |
| Topographical surveys | ☐ | Obtain specified operating conditions | ☐ |
| Well logs | ☐ | | |
| Geophysical data | ☐ | | |

WHAT THE WORKER DOES—Continued

Obtain specified type of recording	☐	Profiles	☐
Other (specify)	☐	Other (specify)	☐
Reads dials, gages, and meters	☐	Prepares:	
Records readings	☐	Charts of time and depth profiles	☐
Develops negatives of photographically		Contour maps from computed data	☐
recorded sound waves	☐	Diagrams	☐
Prints:		Profiles	☐
Photographic charts	☐	Cross sections	☐
Copies of recorded graphs	☐	Surface and subsurface maps	☐
Other (specify)	☐	Maps of exploratory and production areas	☐
Locates and marks sites for conducting		Recommendations	☐
geophysical prospecting activities	☐	Reports	☐
Diagnoses causes of malfunctioning		Other (specify)	☐
instruments and equipment	☐	Analyzes:	
Refers to schematic drawings to locate		Seismograph readings	☐
source of malfunction	☐	Core samples for:	
Repairs instruments and equipment	☐	Porosity	☐
Corrects readings to:		Permeability	☐
Allow for elevation, latitude, and		Oil	☐
irregularities of terrain	☐	Water saturation	☐
Conform with physical characteristics, as:		Combustible gas content	☐
Weathering of surface strata	☐	Amount of gas by volume	☐
Surface velocities	☐	Salinity of drilling mud	☐
Earth elevation	☐	Fluid in samples for chemical content	☐
Other (specify)	☐	Other (specify)	☐
Correlates:		Recommends:	
Readings taken at various locations	☐	Modification of shot depths	☐
Data	☐	Location for positioning sound recorder	
Other (specify)	☐	devices	☐
Plots:		Revisement of prospecting procedures	☐
Gradients	☐	Actions on oil and gas leases and contracts	☐
Curves	☐	Other (specify)	☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Management	☐	Surveyors	☐
Superintendent	☐	Geologists	☐
Engineering Personnel	☐	Physicists	☐
Supervisors	☐	Field Laboratory Personnel	☐
Drillers	☐	Mechanics	☐
Party Chief	☐	Helpers	☐
Observers	☐	Other (specify)	☐
Computer Personnel	☐		

EDUCATION AND TRAINING

Record an "X" to indicate education and training required.

Elementary	☐	Junior College	☐
High School	☐	College	☐

EDUCATION AND TRAINING—Continued

Vocational School ☐ On-the-job Training ☐
 Technical School ☐ Other (specify) ☐

SUBJECTS AND COURSES

Record an "X" after subjects and courses that develop skills for the occupation.

Applied Science	☐	Mathematical Analysis	☐
Cartography	☐	Mathematics of Physics and Engineering	☐
Care and Use of Tools	☐	Trigonometry	☐
Care and Use of Instruments	☐	Mechanics:	
Chemistry:		Fluid Mechanics	☐
Applied Chemistry	☐	Mechanics of Materials	☐
Analytical Chemistry	☐	Petroleum Engineering:	
Inorganic Chemistry	☐	Introduction to Petroleum Technology	☐
Qualitative Analysis	☐	Properties of Reservoir Rocks	☐
Drafting	☐	Fluid Flow Through Porous Rocks:	
Elements of:		Single Phase Flow	☐
Electrical Engineering	☐	Multiphase Flow	☐
Electronics Engineering	☐	Properties of Reservoir Fluids	☐
Supervision	☐	Introduction to Reservoir Engineering	☐
Geology-Geophysics:		Reserve Estimations	☐
Applied Physics	☐	Formation Evaluation	☐
Earth Physics	☐	Methods of Estimating Reserves:	
Exploratory Physics	☐	Well Logging	☐
Fundamentals of:		Volumetric Material Balance	☐
Mechanics	☐	Oil and Gas Land Valuation	☐
Heat	☐	Engineering Appraisal	☐
Sound	☐	Drilling Technology and Subsurface Method:	
Optics	☐	Theory and Practice in Drilling	
Electricity	☐	Technology	☐
Magnetism	☐	Mechanical Properties of Reservoir	
General Geophysics	☐	Rocks	☐
Geomorphology	☐	Properties of Drilling Fluids	☐
Geotectonics	☐	Oil Production Technology	☐
Historical Geology	☐	Subsurface Methods:	
Modern Concepts in Geological Sciences	☐	Analysis and Correlation of	☐
Marine Geology	☐	Subsurface Data from Cores	☐
Mineralogy	☐	Electrical Well Logging	☐
Micropaleontology	☐	Directional and Dip Surveys	☐
Optical Mineralogy	☐	Production Tests	☐
Paleontology	☐	Map Construction:	
Petrology	☐	Structural Thickness Maps	☐
Physics of Earth's Interior	☐	Porosity Maps	☐
Physical Geology	☐	Productivity of Permeability Contour	
Stratigraphy and Sedimentation	☐	Maps	☐
Structural Geology	☐	Cross Section Maps	☐
Introduction to:		Subsurface Methods Practice	☐
Engineering Design	☐	Drilling Mud Technology:	
Engineering Geology	☐	Functions of Drilling Fluids	☐
Study of Engineering	☐	Properties of Drilling Fluids:	
Mathematics:		Physical Properties	☐
Algebra	☐	Chemical Properties	☐
Arithmetic	☐	Colloidal Properties	☐
Calculus	☐	Chemical Treatment	☐

SUBJECTS AND COURSES—Continued

Mechanical Effects	☐	Advanced Calculation Methods:	
Flow Characteristics	☐	Numerical Analyses	☐
Test Procedures	☐	Statistical Analyses	☐
Interpretation	☐	Operational Methods	☐
Petroleum Reservoir Engineering:		Fluid Flow Through Porous Media:	
Basic Concepts	☐	Capillary Effects	☐
Analytical Methods	☐	Gravity Effects	☐
Application of Hydrodynamic Theory	☐	Mechanisms of:	
Principles of Interpretation of		Miscible Displacement Processes	☐
Measurements:		Immiscible Displacement Processes	☐
Electrical Well Logging Methods	☐	Surveying	☐
Nonelectrical Well Logging Methods	☐	Other (specify)	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines:		Electrical prospecting equipment	☐
Air compressors	☐	Gravity prospecting equipment	☐
Diesel:		Magnetic prospecting equipment	☐
Engines	☐	Nuclear prospecting equipment	☐
Winches	☐	Short wave radio equipment	☐
Metalworking machines:		Seismographic prospecting equipment	☐
Brakes	☐	Sound detection devices	☐
Drill presses	☐	Welding apparatus	☐
Grinders	☐	Other (specify)	☐
Lathes	☐		
Shears	☐	Work Aids:	
Mixers	☐	Aerial photographs	☐
Portable rotary drilling rig	☐	Cores	☐
Other (specify)	☐	Drill cuttings	☐
		Drafting instruments	☐
Tools:		Drawings	☐
Handtools:		Engineering orders	☐
Files	☐	Field data sheets	☐
Knives	☐	Formulas	☐
Screwdrivers	☐	Measuring instruments:	
Scribers	☐	Barometers	☐
Punches	☐	Ammeters	☐
Pliers	☐	Gravimeters	☐
Shovels	☐	Magnetometers	☐
Wire strippers	☐	Pendulum devices	☐
Wrenches	☐	Ohmmeters	☐
Tongs	☐	Torsion balances	☐
Power handtools:		Thermometers	☐
Pneumatic wrenches	☐	Seismograms	☐
Pneumatic drills	☐	Oscilloscopes	☐
Electric drills	☐	Shooting instructions	☐
Soldering guns	☐	Squares	☐
Soldering irons	☐	Tapes	☐
Other (specify)	☐	Manuals	☐
		Survey reports	☐
Equipment:		Signal generator	☐
Amplifiers	☐	Circuit diagrams	☐
Electrical detonating devices	☐	Conversion tables	☐
Electrical generators	☐		

PRODUCTS

Record an "X" to indicate products produced.

Charts	☐	Survey reports:	
Diagrams	☐	Geological survey reports	☐
Maps:		Geophysical survey reports	☐
Terrain maps	☐	Seismographic:	
Surface maps	☐	Prints	☐
Subsurface maps	☐	Strips	☐
Profile maps	☐	Shooting reports	☐
Cross section maps	☐	Photographic prints	☐
Subsurface contour maps	☐	Scouting reports	☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial	☐	Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

PETROLEUM AND NATURAL GAS PRODUCTION

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with:

- Drilling exploratory wells to locate gas or oil deposits ☐
- Drilling oil or gas wells in a proven oilfield ☐
- Producing oil and gas from operating wells ☐
- Treating gas or oil to remove impurities and recover by-products ☐
- Providing technical oilfield services to solve drilling or production problems ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

Operating:

- Natural gas treating equipment at oilfield ☐
- Crude oil treating equipment at oilfield ☐
- Drilling equipment to drill for gas or oil ☐
- Digging and pipelaying machines to build oilfield pipelines ☐

Erecting:

- Derricks and drilling rigs for drilling operations ☐
- Oilfield buildings to house machines and machinery ☐

Installing:

- Oilfield machinery and equipment ☐
- Pumps, valves, separators, and meters in oilfield pipeline ☐

Providing:

- Gun perforating services ☐
- Well cleaning services ☐
- Electrical well logging services ☐
- Well surveying services ☐
- Well shooting services ☐
- Pumping, gaging, and storing crude oil ☐
- Sampling and testing natural gas ☐
- Inspecting, testing, rebuilding, and salvaging surplus oilfield tools and equipment ☐
- Other (specify) ☐

Reviews or analyses:

- Job proposals ☐
- Work orders ☐
- Drilling schedules and reports ☐
- Well production reports ☐
- Gas treating plant reports ☐
- Crude oil treating reports ☐
- Work progress reports ☐
- Maintenance and repair requests ☐
- Pumping and gaging reports ☐
- Dispatching reports ☐
- Other (specify) ☐

WHAT THE WORKER DOES—Continued

Plans:

- Production schedules for wells to meet production quotas ☐
- Treatment plant schedules ☐
- Methods and procedures for solving well production or drilling problems ☐
- Schedules for maintenance and repair work ☐
- Manpower and man-hour requirements for specific jobs ☐
- Material, tool, machine, and equipment needs ☐
- Installation of buildings, machinery, and equipment at well site ☐
- Methods and procedures for servicing wells or drill holes ☐
- Methods and procedures for increasing well production ☐
- Other (specify) ☐

Confers with:

- Supervisory personnel about:
 - Well repressurizing methods and procedures ☐
 - Changes in pumping methods or operations to obtain optimum production ☐
 - Drilling operations ☐
 - Well servicing operations ☐
- Management personnel about:
 - Nature of drilling or production problem ☐
 - Methods and procedures available for solving problem ☐
 - Performance or progress data on jobs and operations ☐
- Oil producing customers concerning:
 - Nature and type of services which can be supplied by company ☐
 - Negotiating contract for services ☐
 - Other (specify) ☐

Recommends:

- Revision of current procedures to control costs and increase production efficiency ☐
- Utilisation of outside contractors to provide services or perform jobs ☐
- Use of company employees to perform work ☐
- Personnel actions such as promotions, discharges, or disciplinary actions ☐
- Other (specify) ☐

Coordinates:

- Department activities with those of other departments ☐

- Pumping and treating activities with production activities ☐
- Activities of workers and field crews ☐
- Other (specify) ☐

Trains workers in:

- Drilling methods and procedures ☐
- Operation of machinery, machines, and equipment ☐
- Tasks of specific job ☐
- Observance of safety practices ☐
- Other (specify) ☐

Assigns workers to specific duties

- Gives worker specific work directions concerning assigned duties ☐
- Observes workers in performance of duties for compliance with work directions ☐
- Interprets technical data for workers ☐
- Enforces worker compliance with safety rules, regulations, and practices ☐
- Evaluates work performance of workers ☐
- Requisitions materials, tools, equipment, and machinery ☐
- Other (specify) ☐

Prepares:

- Drilling schedules and reports ☐
- Manpower allocations for specific jobs ☐
- Cost estimates for job or work proposals ☐
- Well production schedules and reports ☐
- Oil and gas treatment schedules and reports ☐
- Pumping and gaging reports ☐
- Repair and maintenance reports ☐
- Other (specify) ☐

Erects:

- Drilling derricks and rigs ☐
- Buildings and racks at well site ☐
- Oil holding tanks in oilfield ☐
- Other (specify) ☐

Hoists and positions structural members

- and secures them in place ☐
- Attaches crown block to structural members ☐
- Installs hoisting engines and other machinery ☐
- Reeves cable through blocks ☐
- Levels and aligns machinery and engines ☐
- Installs ladders, fittings, valves, and other appurtenances ☐
- Other (specify) ☐

- Sets up and operates drilling rigs ☐
- Operates machines or machinery ☐

WHAT THE WORKER DOES—Continued

Controls operation of processing or treating equipment ☐
Tends machines or equipment ☐
Drives and controls operations of machines and special mobile equipment ☐
Assists in operation of machines, machinery or equipment ☐
Other (specify) ☐

Moves levers, throttles, or controls to:
Regulate stroke of beam on cable drilling rig ☐
Regulate speed of rotation of rotary table turning tools in borehole ☐
Start or stop operation of machines or equipment ☐
Adjust operation of machines or equipment to obtain specified performance ☐
Lower or raise:
Tools into or from borehole ☐
End of pipe string into or from borehole ☐
Casings into or from well ☐
Instruments into and from well ☐
Explosive charges or perforating equipment into holes ☐
Detonate or ignite charge in well or borehole ☐
Other (specify) ☐

Sets controls for specified:
Pressure ☐
Flow rates ☐
Temperature ☐
Vacuum ☐
Speed of rotation ☐
Other (specify) ☐

Selects and attaches to cable or drill string:
Drilling bits ☐
Cleaning out tools ☐
Fishing tools ☐
Recording instruments ☐
Explosive charges ☐
Perforating tools ☐
Other (specify) ☐

Examines:
Drill cuttings for effectiveness of drilling bit ☐
Cores or cuttings to ascertain nature of strata at bottom of borehole ☐
Operation of slush pumps to insure prescribed circulation and consistency of drilling mud ☐
Pipelines, flanges, and valves for leaks ☐
Other (specify) ☐

Observes:
Gages, instruments, or recorders to ascertain:
Depth of borehole ☐
Pressure at bottom of well ☐
Presence of gas or oil in mud ☐
Pressure of tools on bottom of well ☐
Other (specify) ☐

Tightens or loosens threaded joints of pipe sections ☐
Assembles and disassembles casings ☐
Places curved metal wedges around pipe string to hold string in place ☐
Guides sections of pipe sections into or from well ☐
Mixes or blends:
Well acids for acidizing wells ☐
Drilling mud to cool bit ☐
Chemicals for injection into well ☐
Cement for concreting casings ☐
Other (specify) ☐

Gages amount of oil in tanks, using calibrated tape ☐
Charges:
Gun perforators with explosive charges ☐
Carriers with specified chemicals ☐
Torpedos, dynamite, or nitro into borehole ☐
Other (specify) ☐

Tests:
Natural gas for:
BTU values ☐
Flame candlepower ☐
Specific gravity ☐
Proportion of various elements ☐
Cores for presence and type of oil bearing strata ☐
Oil or gas to insure removal of impurities ☐
Steel tubing, casings, and drill pipe for internal flaws ☐
Other (specify) ☐

Unloads materials, supplies, and tools at well site ☐
Digs ditches for laying of pipe ☐
Grades ground for erection of buildings, rigs, or tanks ☐
Analyzes samples of fluids in well ☐
Charts pressure of fluid which reveals strata formation ☐
Keeps records of:
Footage drilled ☐
Materials used ☐
Location and nature of strata at each depth ☐

WHAT THE WORKER DOES—Continued

- | | | | |
|---|--------------------------|--|--------------------------|
| Well production | ☐ | Measures parts for dimensional specifications | ☐ |
| Processing operations | ☐ | Repairs or replaces defective part | ☐ |
| Caging of tanks | ☐ | Assembles parts | ☐ |
| Pumping operations | ☐ | Sets specified clearances between moving parts | ☐ |
| Other (specify) | ☐ | Tests unit for specified operational performance | ☐ |
| Repairs or overhauls machines or equipment: | | Other (specify) | ☐ |
| Disassembles malfunctioning unit | ☐ | | |
| Cleans and inspects parts | ☐ | | |

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

- | | | | |
|----------------------|--------------------------|---------------------------------|--------------------------|
| Management | ☐ | Field Crew | ☐ |
| Superintendent | ☐ | Laboratory Personnel | ☐ |
| Supervisors | ☐ | Service Company Personnel | ☐ |
| Drillers | ☐ | Pipeline Personnel | ☐ |
| Operators | ☐ | Other (specify) | ☐ |
| Helpers | ☐ | | |

EDUCATION AND TRAINING

Record an "X" to indicate education and training required.

- | | | | |
|-------------------------|--------------------------|---------------------------|--------------------------|
| Elementary | ☐ | Apprenticeship | ☐ |
| High School | ☐ | On-the-job Training | ☐ |
| Junior College | ☐ | Other (specify) | ☐ |
| Vocational School | ☐ | | |

SUBJECTS AND COURSES

Record an "X" to indicate subjects and courses that develop skills for the occupation.

- | | | | |
|--|--------------------------|--|--------------------------|
| Related Subjects and Courses: | | Field Mapping | ☐ |
| Practical Arithmetic | ☐ | Subsurface Mapping | ☐ |
| Mathematics | ☐ | Well Correlations | ☐ |
| Applied Science | ☐ | Historical Geology | ☐ |
| Applied Physics | ☐ | Geophysical Methods | ☐ |
| Production Analysis | ☐ | Electric Log Interpretation | ☐ |
| Slide Rule | ☐ | Rotary Drilling | ☐ |
| Mechanical Drawing | ☐ | Drilling Equipment | ☐ |
| Map Drawing | ☐ | Drilling Mud | ☐ |
| Blueprint Reading | ☐ | Prime Movers | ☐ |
| Use and Care of Tools | ☐ | Circulating Systems | ☐ |
| Use and Care of Instruments | ☐ | Derricks and Masts | ☐ |
| Physical Properties of Metals and Alloys | ☐ | Drilling Mud Make-up Control | ☐ |
| Heat Treating | ☐ | Capacity and Design of: | |
| Destructive and Non-destructive Testing | ☐ | Derricks | ☐ |
| Human Relations | ☐ | Masts | ☐ |
| Organization and Supervision | ☐ | Trusses | ☐ |
| Other (specify) | ☐ | Elements of Surveying for Use in: | |
| Petroleum Technology: | | Location of Boundaries | ☐ |
| Identification and Classification of Minerals and Rocks from Well Cuttings | ☐ | Location of Wells | ☐ |
| | | Building Well Foundations | ☐ |
| | | Mapping of Directionally Drilled Wells | ☐ |

SUBJECTS AND COURSES—Continued

Casing Program Design	☐	Field Identification of Sucker Rod Problem	☐
Effect of Additives and Contaminates on:		Temperature Correction Factors	☐
Setting Time of Cement Slurries	☐	Types of Corrosion and Control Methods	☐
Ultimate Strength of Cement Slurries	☐	Directional Drilling	☐
Volumetric and Pressure Problems in:		Casing and Cementing Wells	☐
Hydrating Wells	☐	Drilling Procedures	☐
Acidizing Wells	☐	Acidizing Wells	☐
Measurement in Reservoir of:		Hydrating Wells	☐
Porosity	☐	Shooting Procedures	☐
Permeability	☐	Gravel Packing	☐
Saturation	☐	Well-Head Connections	☐
Single Phase Flow Rates	☐	Tubing Well	☐
Effects of Phase Mixtures	☐	Factors of Low-Artificial Flow Methods	☐
Effects of Chokes on Flow Rates in Tubing	☐	Oil and Gas Separators	☐
Orifice and Positive Displacement Meters	☐	Pumping Wells	☐
Oilfield Instruments and Controls	☐	Field Stock Tanks	☐
Gravity Determination	☐	Subsurface Repairs	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines:

Compressors:

- Air compressors
- Gas compressors

Centrifuges

Catheads

Drilling machinery:

- Cable drilling
- Rotary drilling
- Draw works

Engines:

- Diesel powered
- Electric powered
- Gasoline powered
- Steam powered

Elevators

Hoists

Pumps:

- Acid pumps
- Centrifugal pumps
- Cement pumps
- Injection pumps
- Mud pumps
- Positive displacement pumps
- Turbine pumps
- Vacuum pumps

Winches

Other (specify)

Tools:

Handtools:

- Bars
- Hack saws

- Hammers
- Pick axes
- Pliers
- Screwdrivers
- Scrapers
- Shovels
- Sledges
- Punches
- Scribers
- Tongs
- Wire brushes
- Wrenches
- Other (specify)

Pneumatic tools:

- Wrenches
- Drills
- Grease gun
- Other (specify)

Oilfield tools:

- Drilling bits
- Fishing tools
- Swabbing tools
- Cleaning tools
- Other (specify)

Equipment:

- Absorption equipment
- Condensers
- Steam boilers
- Heaters
- Furnaces

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Scales	☐	Reports:	
Absorption towers	☐	Operational reports	☐
Fractionating towers	☐	Drilling progress reports	☐
Stillas	☐	Pumping reports	☐
Cooling towers	☐	Treating reports	☐
Stripping towers	☐	Production reports	☐
Meters:		Gaging reports	☐
Orifice meters	☐	Laboratory reports	☐
Positive displacement meters	☐	Status reports	☐
Separators	☐	Repair and maintenance reports	☐
Other (specify)	☐	Sketches	☐
Work Aids:		Field maps	☐
Charts	☐	Work orders	☐
Borehole charts	☐	Job proposals	☐
Blueprints	☐	Requisitions	☐
Logs	☐	Instruments:	
Well logs	☐	Micrometers	☐
Schedules:		Calipers	☐
Drilling schedules	☐	Gage blocks	☐
Production schedules	☐	Manometer	☐
Pumping schedules	☐	Calibration	☐
Work schedules	☐	Electric well logging	☐
Inspection schedules	☐	Rules	☐
Testing schedules	☐	Feeler gages	☐
Gaging schedules	☐	Squares	☐
Water injection schedules	☐	Plumb line	☐
		Straight edge	☐
		Other (specify)	☐

PRODUCTS AND SERVICES

Record an "X" to indicate products produced or services rendered.

Crude petroleum and natural gas:		Other (specify)	☐
Crude petroleum:		Gas and oilfield contractor services:	
Crude oil	☐	Well services:	
Shale oil	☐	Acidizing services	☐
Natural gas	☐	Bailing services	☐
Other (specify)	☐	Cementing well casing services	☐
Natural gas liquids:		Chemical treating services	☐
Natural butane	☐	Cleaning services	☐
Casing head butane and propane	☐	Foundation building services	☐
Cycle condensates	☐	Foundation grading services	☐
Isobutane	☐	Logging services	☐
Natural liquefied petroleum gases	☐	Perforating services	☐
Natural gasoline	☐	Plugging services	☐
Natural propane	☐	Pumping services	☐
Other (specify)	☐	Shooting services	☐
Well drilling contractor services:		Surveying services	☐
Gas and oil well directional drilling services	☐	Swabbing services	☐
Dryhole drilling services	☐	Derrick building services	☐
Gas and oil well redrilling services	☐	Gas compressing services	☐
Gas and oil well spudding in services	☐	Lease tank erecting, cleaning, repairing services	☐
		Mud services for drilling	☐

PRODUCTS AND SERVICES—Continued

- | | | | |
|--------------------------------|--------------------------|---|--------------------------|
| Oil sampling services | ☐ | Cutting services | ☐ |
| Well casings, tubes, and rods: | | Rig building, repairing, dismantling services | ☐ |
| Pulling services | ☐ | Other (specify) | ☐ |
| Running services | ☐ | | |

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

- | | | | |
|-------------------------------|--------------------------|----------------------------|--------------------------|
| Agriculture | ☐ | Financial | ☐ |
| Commercial: | | Government Service | ☐ |
| Business Service | ☐ | Industrial | ☐ |
| Food and Beverage | ☐ | Insurance | ☐ |
| Lodging Service | ☐ | Legal | ☐ |
| Personal Service | ☐ | Library | ☐ |
| Printing and Publishing | ☐ | Medical Service | ☐ |
| Repair Service | ☐ | Military | ☐ |
| Sales | ☐ | Nonprofit | ☐ |
| Communications | ☐ | Office Service | ☐ |
| Conservation | ☐ | Recreation | ☐ |
| Construction | ☐ | Social Service | ☐ |
| Correctional | ☐ | Subsurface and Space | ☐ |
| Educational | ☐ | Transportation | ☐ |
| Entertainment | ☐ | Utilities | ☐ |
| Exhibition Center | ☐ | Other (specify) | ☐ |

PETROLEUM REFINING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with:

- Processing crude oil at oilfield facility to remove natural gas and impurities
- Petroleum company's marine terminal operations
- Transfer and routing of oil or petroleum products in refinery pipelines
- Processing and handling of asphalt and road oil products
- Straight run distillation of crude oil
- Thermal cracking of crude oil
- Catalytic cracking of crude oil and gas-oil stocks
- Solvent processing of oil and gas-oil stocks
- Alkylation processing of oil and gas-oil stocks
- Processing petroleum tars into coke
- Polymerization of gaseous hydrocarbons
- Reforming of hydrocarbons
- Treating of petroleum products or converting impurities into byproducts
- Other (specify)

Supervises, and coordinates activities of, workers engaged in:

- Extracting natural gas, sediment, and chemicals from crude oil at oilfield
- Loading, unloading, gaging, and testing operations at a marine terminal
- Bulk handling in refinery pipelines of crude oil, in-process materials, and products
- Thermal cracking of crude oil into fractional petroleum distillates
- Catalytic cracking of crude oil into fractional petroleum distillates
- Thermal cracking of heavy oil distillates into gas-oil stocks
- Solvent processing of products to remove impurities
- Hydrogenation of products to remove impurities and recover byproducts
- Catalytic hydrogenation of low octane naphthenic stocks
- Catalytic hydrogenation and cracking of gas-oil stocks
- Alkylating low octane stock to produce high octane blending stock
- Blending of additives with products to improve quality and performance
- Coking petroleum tars
- Other (specify)

- Confers with management or supervisory personnel concerning availability of materials
- Plans manpower and equipment requirements for scheduled production
- Prepares work schedules
- Assigns workers to specific duties

- Gives workers directions concerning assigned duties
- Requisitions materials and supplies for specified processing activities
- Coordinates processing activities with other activities of refinery
- Inspects equipment and machines in operation for functional efficiency
- Compares readings of instruments on units with central control room instruments
- Enforces established work procedures, company regulations and safety rules

WHAT THE WORKER DOES—Continued

Trains workers in operation and control of processing equipment and machinery	☐	Processing temperatures	☐
Requests repair or maintenance on equipment, machines, and instrumentation	☐	Pressures	☐
Evaluates individual workers' performance	☐	Vacuums	☐
Initiates personnel actions, such as promotion discharge, or disciplinary action	☐	Processing cycles	☐
Prepares activity, production, and processing reports	☐	Timing cycles	☐
Resolves employee grievances or submits them to higher authority	☐	Material levels in units and tanks	☐
Other (specify)	☐	Material volumes	☐
		Amounts of catalysts or additives	☐
		Recirculation of materials	☐
		Other (specify)	☐
Reads or reviews:		Turns handwheels, switches, or opens piping crossconnection valves to:	
Schedules	☐	Line up equipment for processing operations	☐
Specifications	☐	Direct flow of materials in pipelines	☐
Operating logs	☐	Regulate outside located controls on towers and columns	☐
Laboratory reports	☐	Maintain specified levels in units or tanks	☐
On-station test results	☐	Bleed lines for obtaining samples of materials or clean residue from lines	☐
Production orders	☐	Other (specify)	☐
On-line computer processing unit print-outs	☐		
Other (specify)	☐		
Determines:		Monitors:	
Processing procedures and sequences	☐	Processing activities and operating equipment controlled by on-line computer	☐
Line-up of system and equipment in processing units	☐	Central control room instruments, lights, and alarms	☐
Operational settings on processing equipment and machines	☐	Instrumentation and controls on equipment	☐
Routing of inprocess and finished products	☐	Operation of towers and columns	☐
Adjustments to equipment or processing changes	☐	Other (specify)	☐
Maintenance and repair needs on equipment and machines	☐		
Other (specify)	☐	Analyzes:	
Sets up and operates machines	☐	Computer printouts on processing activities	☐
Controls operation of processing units from remote control central station	☐	On-station tests of material samples	☐
Controls operation of processing unit at unit	☐	Laboratory reports	☐
Monitors processing controlled by on-line computer	☐	Operating log entries	☐
Tends machines and equipment	☐	Readings on recorders, instruments, and gages	☐
Assists worker in operating of processing unit	☐	Other (specify)	☐
Other (specify)	☐		
Sets controls or automatic control mechanisms for specified:		Moves controls, timers, or remote control devices to:	
Material flow rates	☐	Start and stop operations	☐
		Adjust, control, and maintain within specified limits processing variables	☐
		Change processing procedures or sequences	☐

WHAT THE WORKER DOES—Continued

- | | |
|---|--|
| <p>Obtain product meeting specifications ☐</p> <p>Reroute materials ☐</p> <p>Reprocess materials ☐</p> <p>Recirculate materials ☐</p> <p>Other (specify) ☐</p> <p>Calculates or computes:</p> <p>Amounts of additives required for blending products ☐</p> <p>Quantity of materials in ships' tanks, storage tanks, or tankcars ☐</p> <p>Volume of products or material pumped through pipelines ☐</p> <p>Other (specify) ☐</p> <p>Conducts laboratory tests on:</p> <p>Crude oil for chemical content and presence of foreign matter ☐</p> <p>In-process materials at various processing stages ☐</p> <p>Finished products for conformance with specifications ☐</p> <p>Antiknock qualities of grades and blends of gasoline ☐</p> <p>Other (specify) ☐</p> <p>Performs on-station tests on samples for:</p> <p>American Petroleum Institute specific gravity reading ☐</p> | <p>End point ☐</p> <p>Boiling point ☐</p> <p>Presence of impurities ☐</p> <p>Chemical reaction ☐</p> <p>Conformance with processing specifications ☐</p> <p>Other (specify) ☐</p> <p>Obtains samples of materials for testing ☐</p> <p>Gages materials in tanks ☐</p> <p>Takes temperature of materials in tanks ☐</p> <p>Refers to conversion tables or charts for data used in calculations ☐</p> <p>Reads instruments, meters, and gages ☐</p> <p>Records readings and operating data in logbook ☐</p> <p>Weights materials used as additives or catalysts ☐</p> <p>Patrols lines and equipment areas to locate leaks or equipment malfunctions ☐</p> <p>Lubricates and oils machines and machinery ☐</p> <p>Makes minor repairs on machines or pipeline valves ☐</p> <p>Reports malfunctions to supervisory personnel ☐</p> <p>Other (specify) ☐</p> |
|---|--|

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

- | | |
|--|--|
| <p>Management ☐</p> <p>Supervisors ☐</p> <p>Other Supervisors ☐</p> <p>Operators ☐</p> <p>Helpers ☐</p> | <p>Laboratory Personnel ☐</p> <p>Pipeline Personnel ☐</p> <p>Training Personnel ☐</p> <p>Other (specify) ☐</p> |
|--|--|

EDUCATION AND TRAINING

Record an "X" to indicate education and training required.

- | | |
|---|--|
| <p>Elementary ☐</p> <p>High School ☐</p> <p>Junior College ☐</p> <p>Vocational School ☐</p> | <p>Technical School ☐</p> <p>On-the-job Training ☐</p> <p>Military Training ☐</p> <p>Other (specify) ☐</p> |
|---|--|

SUBJECTS AND COURSES

Record an "X" to indicate subjects or courses that develop skills for the occupation.

- | | |
|---|---|
| <p>Related Subjects and Courses:</p> <p>Practical Arithmetic ☐</p> <p>Applied Science ☐</p> | <p>Applied Chemistry ☐</p> <p>Properties of Materials ☐</p> <p>Production Analysis ☐</p> |
|---|---|

SUBJECTS AND COURSES—Continued

Formulas	☐	Pumps:	
Industrial Instrumentation	☐	Centrifugal Pumps	☐
Applied Physics	☐	Positive Displacement Pumps	☐
Other (specify)	☐	Pump and Compressor Drivers:	
		AC Motor	☐
Petroleum Processing Unit Operator:		Steam Turbines	☐
Practical Distillation:		Combustion Gas Turbines	☐
What are Hydrocarbons	☐	Internal Combustion Engines	☐
How Distillation Works	☐	Couplings, Gear Trains, and Belt Drivers	☐
Fractionating Equipment	☐	Steam Engines and Steam Reciprocating Pumps	☐
Use of Fractionating Equipment	☐	Significance of Process Control Tests	☐
Normal Operations	☐	Cost Reduction for Operators	☐
Normal Operating Situations	☐	Fire Fighting:	
Abnormal Operations	☐	Fuels and Combustion	☐
Abnormal Operating Situations	☐	Water	☐
Nature of Heat:		Foams and Extinguishers	☐
Heat and Temperature	☐	Tactics and Strategy	☐
Heat Transfer	☐	Accident Control Techniques	☐
Fuels and Combustion	☐	Valves	☐
Furnace Operation:		Cooling Towers	☐
The Furnace	☐	Chemistry and Petroleum:	
Combustion and Air Control	☐	Atoms and Molecules	☐
Startup and Shutdown	☐	The Alkane Family	☐
Furnace Situations	☐	Isomerism of Hydrocarbons	☐
Mechanics of Fluids:		Alkenes, Alkadienes, Alkyenes	☐
An Introduction to Fluids	☐	Cyclic Hydrocarbons	☐
The Behavior of Gases	☐	Refining of Petroleum	☐
Statics	☐	Cracking Catalysts	☐
Fluids in Motion	☐	Isomerization-Catalytic Reforming	☐
Compressors:		Chemistry of Petroleum Products In Use	☐
Introduction to Compression	☐	Petrochemicals	☐
Positive Displacement Compressors	☐	Instrumental Analysis	☐
Centrifugal Compressors	☐	Principles of Polymerization	☐
Instrumentation for Operators:		Mass Transfer	☐
Measuring Instruments	☐	Nature of Petroleum	☐
Pressure and Temperature	☐	Other (specify)	☐
Liquid Level and Flow	☐		
Analytical Instruments	☐		
Process Control Instruments	☐		
Controllers and Control Modes	☐		

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines:		Blending tanks	☐
Agitators	☐	Centrifuges	☐
Blowers	☐	Turbines:	
Compressors:		Steam turbines	☐
Air compressors	☐	Gas turbines	☐
Gas compressors	☐	Pumps:	
Filter press	☐	Positive displacement	☐
Vacuum rotary filters	☐	Reciprocating	☐
Mixers:		Turbine	☐
Mixing tanks	☐	Centrifugal	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Air Ejectors	☐	Extractor columns	☐
Vacuum pumps	☐	Gas scrubbers	☐
Other (specify)	☐	Oil scrubbers	☐
Tools:		Electrostatic precipitators	☐
Wrenches	☐	Water recycling equipment	☐
Pipe wrenches	☐	Other (specify)	☐
Bars	☐	Work aids:	
Screwdrivers	☐	Meters:	
Pliers	☐	Hydrometers	☐
Other (specify)	☐	Calorimeters	☐
Equipment:		Salinometers	☐
Absorption equipment	☐	Manometers	☐
Accumulators	☐	Viscometers	☐
Clarifiers	☐	Ph Meters	☐
Concentrators	☐	Flowmeters	☐
Condensers	☐	Refractometers	☐
Convertors	☐	Titrometers	☐
Diffusers	☐	Turbidometer	☐
Distilling equipment:		Chromatographs	☐
Continuous processing stills	☐	Thermometers	☐
Semi-continuous processing stills	☐	Manuals:	
Computer controlled processing stills	☐	Operating manuals	☐
Coking stills	☐	Safety manuals	☐
Driers	☐	Procedures manuals	☐
Evaporators	☐	Processing manuals	☐
Furnaces:		Schedules:	
Still furnaces	☐	Production schedules	☐
Waste gas furnaces	☐	Operating schedules	☐
Heaters	☐	Loading schedules	☐
Heat Exchangers	☐	Receiving schedules	☐
Boilers	☐	Routing schedules	☐
Driers	☐	Work schedules	☐
Spray Driers	☐	Specifications:	
Stabilizers	☐	Processing specifications	☐
Rechargers	☐	Refining specifications	☐
Retorts	☐	Product specifications	☐
Reactors	☐	Operating logs	☐
Catalytic reactor equipment	☐	Laboratory reports	☐
Weighing scales:		Formulas:	
Platform scales	☐	Treating formulas	☐
Analytical scales	☐	Blending formulas	☐
Automatic weighing equipment	☐	Compounding formulas	☐
Electronic processing equipment:		Sinton vibrators	☐
On-line processing computers	☐	Charts	☐
Sample analyzers	☐	Graphs	☐
Blending control computers	☐	Recording indicators	☐
Processing towers and columns:		Automatic alarms	☐
Fractionating towers	☐	Panelboard lights	☐
Absorption towers	☐	Test logs	☐
Quenching towers	☐	Engine Knock comparators	☐
Cooling towers	☐	Calculators	☐
Purification towers	☐	Calibrated measuring tapes	☐
Stripping columns	☐	Laboratory glass equipment	☐
		Conversion tables	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Conversion charts	☐	Valve cutouts	☐
Computer printouts	☐	Drawings	☐
Training equipment:		Air actuated training equipment	☐
Processing simulator	☐	Other (specify)	☐
Pump cutouts	☐		

PRODUCTS

Record an "X" to indicate product processed.

Alkylates	☐	Smudging fuels	☐
Aromatic chemicals	☐	Road oils	☐
Asphalt	☐	Petroleum coke	☐
Asphalt materials	☐	Transmission fluids	☐
Carbon black	☐	Hydrocarbon fluids	☐
Liquefied petroleum gas:		Sulfur	☐
Propane	☐	Solvents	☐
Butane	☐	Petrolatums	☐
Lubricating greases	☐	Petrochemical materials	☐
Lubricating oils:		Methane:	
Detergent oils	☐	Methyl alcohol	☐
Paraffin based oils	☐	Acetylene	☐
Wax free oils	☐	Ethylene	☐
Mineral oils	☐	Polyethylene	☐
Illuminating oils	☐	Propylene	☐
Fuels:		Butylene:	
Gasoline:		Isobutylene	☐
High octane gasoline	☐	Butadiene	☐
Aviation gasoline	☐	Napthalene:	
Ethyl added gasoline	☐	Cyclohexane	☐
Low lead gasoline	☐	Benzene	☐
Lead free gasoline	☐	Benzol	☐
Jet engine fuels	☐	Methylcyclohexane	☐
Domestic fuel oils	☐	Toulene	☐
Diesel engine fuel	☐	Petroleum tars	☐
Industrial fuel oil	☐	Other (specify)	☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Educational	☐
Commercial:		Entertainment	☐
Business Service	☐	Exhibition Center	☐
Food and Beverage	☐	Financial	☐
Lodging Service	☐	Government Service	☐
Personal Service	☐	Industrial	☐
Printing and Publishing	☐	Insurance	☐
Repair Service	☐	Legal	☐
Sales	☐	Library	☐
Communications	☐	Medical Service	☐
Conservation	☐	Military	☐
Construction	☐	Nonprofit	☐
Correctional	☐	Office Service	☐

ENVIRONMENTAL SETTING—Continued

Recreation	☐	Transportation	☐
Social Service	☐	Utilities	☐
Subsurface and Space	☐	Other (specify)	☐

SAWMILL AND PLANING MILL WORK

Inventory

WHAT THE WORKER DOES

Below are listed activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with operations of a:

- Sawmill ☐
- Planing mill ☐
- Speciality products mill ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

- Unloading, ponding, and sorting logs according to size and species ☐
- Processing of logs to produce lumber and wood products ☐
- Planing of lumber to produce surfaced and dimensional lumber products ☐
- Sharpening of saws, knives, and cutters used in mill operations ☐
- Processing of logs or lumber into specialty forest products ☐
- Drying of green cut lumber in kilns ☐
- Other (specify) ☐

Reviews or studies:

- Sales orders ☐
- Production reports ☐
- Order status reports ☐
- Pending orders ☐
- Material, tool, and equipment requisitions ☐
- Log and pond storage reports ☐
- Planing mill schedules ☐
- Master control inventory sheet ☐
- Maintenance and repair reports ☐
- Kiln drying schedules ☐
- Other (specify) ☐

Plans or determines:

- Mill schedules ☐
- Production schedules ☐
- Work priority and sequence schedules ☐
- Log species and sizes to be processed ☐
- Manpower requirements ☐
- Machine and equipment utilization ☐
- Manpower utilization ☐
- Machine and equipment requirements ☐
- Maintenance and repair activities ☐
- Other (specify) ☐

Prepares:

- Work schedules ☐
- Work assignments ☐

WHAT THE WORKER DOES—Continued

Planing schedules	☐	Other (specify)	☐
Stock control sheets	☐	Installs, aligns, and secures in position:	
Physical inventory reports	☐	Saws	☐
Kiln drying reports	☐	Knives	☐
Production status reports	☐	Cutters	☐
Repair and maintenance reports	☐	Pressure rolls	☐
Revisions of production schedules due to production line breakdowns	☐	Guides	☐
Other (specify)	☐	Stops	☐
Coordinates:		Grinders	☐
Mill operations with other operations of company	☐	Spray guns	☐
Flow of materials through production operations	☐	Other (specify)	☐
Worker activities to obtain optimum efficiency	☐	Presses pushbutton controls on machine console or control panelboard to:	
Other (specify)	☐	Activate power supply to machine controls	☐
Assigns workers specific duties	☐	Start machine and machine auxiliaries	☐
Gives workers directions concerning assigned duties	☐	Move workpiece into position for machine operations	☐
Inspects mill machines and equipment for functional efficiency	☐	Feed workpiece into cutting tools	☐
Enforces worker compliance with:		Feed cutting tools into workpiece	☐
Established work procedures	☐	Set machine guides, stops, and tools for specified operations	☐
Company regulations	☐	Adjust position of tools	☐
Safety rules and practices	☐	Reprocess workpiece not meeting specifications	☐
Other (specify)	☐	Move workpiece away from machine after operations are completed	☐
Trains workers in:		Other (specify)	☐
Setup of machines	☐	Moves levers or controls or depresses pedals to:	
Operation of machines, machinery, and equipment	☐	Set:	
Control of equipment	☐	Tension rolls	☐
Assigned duties	☐	Pressure rolls	☐
Other (specify)	☐	Specified temperature	☐
Evaluates worker performance	☐	Specified humidity	☐
Initiates and carries out personnel actions	☐	Specified circulation of air	☐
Other (specify)	☐	Align workpiece against:	
Sets up machines for other workers	☐	Feed guides	☐
Sets up and operates machines or equipment	☐	Holding fingers	☐
Operates machines	☐	Measuring marks	☐
Controls operation of automatic machines or equipment	☐	Aligning mechanisms	☐
Drives and controls operation of machines	☐	Regulate:	
Tends:		Speed of tools	☐
Preset up or automatic machines	☐	Lowering and raising of:	
Conveyors, elevators, or tables to handle material	☐	Guides	☐
Feds materials into machines manually	☐	Stops	☐
Offbears materials from machines or material handling equipment	☐	Holding devices or clamps	☐
		Elevators	☐
		Stacking tables	☐
		Unstacking tables	☐
		Dogs	☐
		Routing of material on material handling system	☐
		Other (specify)	☐

WHAT THE WORKER DOES—Continued

Observes:

- Operations of machines for malfunctions ☐
- Indicating instruments or gages for insuring readings are within operational limitations ☐
- Flow of material on material handling equipment to:
 - Adjust speed to prevent jams or backlogs ☐
 - Detect misalignment of material ☐
 - Detect waste material or foreign matter ☐
- Log, cant, slab, or timber to determine cuts for producing highest grade product ☐
- Level of solutions in spray tanks ☐
- Other (specify) ☐

Inspects or examines:

- Logs or cut lumber for:
 - Knots or knot clusters ☐
 - Pitch lines ☐
 - Disease damage ☐
 - Cracks ☐
 - Mechanical processing flaws ☐
 - Nails or other metal objects ☐
 - Need of reprocessing ☐
 - Determining grade and quality ☐
- Markings on lumber for:
 - Species of wood ☐
 - Grade and quality code ☐
 - Quantity and dimensions ☐
- Cutting tools for:
 - Broken or bent teeth ☐
 - Need of replacement ☐
 - Uniformity of sharpening operations ☐
 - Burrs ☐
 - Need of swaging teeth ☐
 - Need of tensioning ☐
- Other (specify) ☐

Measures:

- Moisture content of lumber in kiln ☐
- Diameter and length of logs for estimating volume of board feet ☐
- Oversize cants to determine length to be sawed off ☐
- Planed dimensional lumber for conformance with specifications ☐
- Other (specify) ☐

Marks:

- Symbols on lumber to indicate:
 - Grade ☐

- Sorting classification ☐
- Reprocessing instructions ☐
- Identifying date on top of:
 - Tied bundles of lumber ☐
 - Stacks of lumber ☐
 - Wrapped packages of lumber ☐
 - Other (specify) ☐

Signals workers to:

- Start processing operations ☐
- Remove loaded kiln car ☐
- Reset ratchets on log ☐
- Stop machine operations ☐
- Other (specify) ☐

Opens valves to:

- Allow coolant to flow on knives during grinding operations ☐
- Spray preservative or non-staining material on lumber ☐
- Allow flow of water in controlling humidity in kilns ☐
- Other (specify) ☐

Patches finished lumber to improve

- appearance or quality ☐
- Cuts out defective section, using power tools ☐
- Prepares patch of size, species, and grain pattern ☐
- Glues patch in place ☐
- Sands patch ☐
- Pulls lumber from material handling equipment ☐
- Stacks lumber on carts ☐
- Separates stacks with stickers ☐
- Ties lumber into bundles of specified number of boards ☐
- Converts dimensions of logs to board feet, using conversion chart ☐
- Calculates percentage of moisture in lumber ☐
- Straightens materials on material handling equipment ☐
- Throws salvage or waste lumber into chipper or hog machine conveyor ☐
- Files burrs or nicks from knives or cutters ☐
- Lubricates machines ☐
- Cleans machines and work area ☐
- Notifies supervisory personnel of estimated time of withdrawal of lumber from kilns ☐
- Tensions band, circular saws, and knives ☐
- Other (specify) ☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Management	☐	Machine Operators	☐
Superintendent	☐	Machine Helpers	☐
Supervisors	☐	Other (specify)	☐
Other Supervisors	☐		

EDUCATION AND TRAINING

Record an "X" to indicate education and training requirements.

Elementary	☐	Vocational School	☐
High School	☐	Technical School	☐
Junior College	☐	On-the-job Training	☐
College	☐		

SUBJECTS AND COURSES

Record an "X" to indicate subjects and courses that develop worker skills.

Subjects and Courses:		Cutting Tool Grinding and Maintenance	☐
Drawing and Blueprint Interpretation	☐	Wood Seasoning	☐
Fundamentals of Cabinet Making	☐	Laying Out Techniques	☐
Practical Arithmetic	☐	Use and Care of Measuring Instruments	☐
Wood Technology:		Wood Finishing Procedures	☐
Uses of Wood Species	☐	Log Scaling	☐
Characteristics of Woods	☐	Lumber Grading	☐
Limitations of Various Woods	☐	Log Handling and Lumber Carrying	
Grades of Woods	☐	Vehicles:	
Woodworking Machines:		Maintenance of Vehicles	☐
Operation of Machines	☐	Operation of Vehicles	☐
Maintenance of Machines	☐	Elements of Supervision	☐
Use and Care of:		Human Relations	☐
Woodworking Handtools	☐	Other (specify)	☐
Power Tools	☐		

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate type and machines, tools, equipment, and work aids used.

Type of machines:		Lathe type barker	☐
Automatic	☐	Ring type barker	☐
Automatic set	☐	Chipper machine	☐
Console controlled	☐	Compressors	☐
Manual controlled	☐	Grinding machines:	
Panel board controlled	☐	Circular saw grinder	☐
Other (specify)	☐	Knife grinder	☐
		Hog machine	☐
Machines:		Material handling machines:	
Bandsaw sharpening machine	☐	Conveyors:	
Bandsaw stretching machine	☐	Bull chain	☐
Barking machine:		Endless belt	☐
Drum type barker	☐	Roller:	
Hydraulic type barker	☐	Feed roller	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Offbearing conveyor	☐	Screwdrivers	☐
Transfer roller conveyor	☐	Shovels	☐
Transfer conveyor system	☐	Wrenches	☐
Elevators:	☐	Power handtools:	
Chain dog elevators	☐	Chainsaws:	☐
Car lift elevators	☐	Hand sanders	☐
Fork car lift elevators	☐	Routers	☐
Table lift elevators	☐	Hand held circular saws	☐
Fork lift trucks	☐	Other (specify)	☐
Hoists	☐	Equipment:	
Lumber carriers	☐	Driers:	
Lumber bundling machine	☐	Drier ovens	☐
Lumber packaging machine	☐	Drying kilns	☐
Lumber stacking machine	☐	Drying drums	☐
Lumber strapping machine	☐	Furnaces	☐
Planing machines	☐	Metal detection device	☐
Rail-transfer kiln car	☐	Other (specify)	☐
Saws:		Work Aids:	
Bandsaws:		Blueprints	☐
Multi-bladed gang saw	☐	Drawings	☐
Adjustable multi-bladed bandsaw	☐	Formulas	☐
Horizontal bandsaw	☐	Laboratory equipment:	
Circular saws:		Centrifuges	☐
Cut-off saw	☐	Driers	☐
Double-end-trim saw	☐	Grinders	☐
Edger saw	☐	Manuals	☐
Multiple blade circular saw	☐	Measuring devices:	
Table saw	☐	Calipers	☐
Trim saw	☐	Moisture meters	☐
Variable position circular saw	☐	Protractors	☐
Lath sawing machine	☐	Rules	☐
Sacking and weighing machine	☐	Scaling stick	☐
Sanding machine:		Scales	☐
Belt sanders	☐	Reports:	
Double-drum sander	☐	Daily reports	☐
Multi-drum sander	☐	Operating reports	☐
Pully sander	☐	Production reports	☐
Spray machines	☐	Processing reports	☐
Weighing and sacking machine	☐	Tally tickets	☐
Other (specify)	☐	Schedules:	
Tools:		Kiln drying schedules	☐
Handtools:		Production schedules	☐
Files	☐	Processing schedules	☐
Hammers	☐	Work schedules	☐
Pickaroons	☐	Other (specify)	☐
Putty Knives	☐		
Punches	☐		

PRODUCTS

Record an "X" to indicate type of mill and mill product produced.

Type of mill:		Cooperage stock	☐
Chipper	☐	Excelsior	☐

PRODUCTS—Continued

Lathing	☐	Flitches	☐
Planing:		Fuelwood	☐
Hardwood	☐	Kiln dried lumber	☐
Softwood	☐	Laminated decking	☐
Sawmill:		Lathing	☐
Custom	☐	Railroad ties	☐
Hardwood	☐	Sawdust	☐
Softwood	☐	Shakes	☐
Special product	☐	Shingles	☐
Shingle	☐	Siding	☐
Other (specify)	☐	Silo stock	☐
		Slabs	☐
Products:		Stickers	☐
Cants	☐	Surfaced lumber	☐
Ceiling lumber	☐	Timbers	☐
Cooperage stock:		Wood bark products	☐
Headers	☐	Wood blanks	☐
Hoops	☐	Wood blocks	☐
Staves	☐	Wood turnings	☐
Cut stock	☐	Wood chips	☐
Dimension lumber	☐	Wood vehicle stock	☐
Excelsior	☐		

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial:		Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

SHIP AND BOAT BUILDING AND REPAIRING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity involved in the job being analyzed.

Directs and coordinates activities relating to:

Laying out, fabricating, and assembling:

Fiberglass boats ☐

Aluminum boats ☐

Wooden boats ☐

Specific craftwork involved in building or repairing of:

Commercial or private ships or boats ☐

Naval vessels ☒

Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

Planning craftwork ☐

Estimating costs of repairs or building of vessels ☐

Scheduling of craftwork in shop or aboard vessel ☐

Shopwork to:

Fabricate or manufacture vessels parts ☐

Repair or overhaul machines, machinery, or equipment ☐

Shipboard work to:

Assemble or install vessel's structural parts, machines, or equipment ☐

Overhaul or repair machines, machinery, equipment, and accessories ☐

Providing craft services to other crafts for accomplishing work ☐

Cleaning and painting of vessels structural parts and equipment ☐

Drydocking vessels and performing work for drydocking of vessels ☐

Other (specify) ☐

Plans:

Manpower requirements for accomplishing craftwork ☐

Worker schedules ☐

Procedures for performing work ☐

Services requirements from other crafts ☐

Shopwork priorities and sequences ☐

Shipboard craftwork priorities and schedules ☐

Training activities of shop and shipboard workers ☐

Quality control and assurance that work meets specifications ☐

Other (specify) ☐

Reads, reviews, or studies:

Production schedules ☐

Material specifications ☐

Work orders ☐

Blueprints, diagrams, or sketches ☐

Product model ☐

WHAT THE WORKER DOES—Continued

Patterns and templates	☐	Using solvents	☐
Inspection reports	☐	Using steam cleaning equipment	☐
Rework orders	☐	Sandblasting	☐
Other (specify)	☐	Washing, using pressure equipment	☐
		Other (specify)	☐
Determines:			
Layout of work	☐	Paints surfaces of structures or equipment	
Machine operations required for producing		using:	
product	☐	Handbrushes	☐
Setup of machines or equipment	☐	Paint spraying equipment	☐
Fabricating sequences	☐	Paint rolling equipment	☐
Assembly procedures and sequences	☐	Other (specify)	☐
Installation procedures and sequences	☐		
Repair, rework, or modification		Prepares work schedules for workers	☐
requirements	☐	Assigns workers specific duties	☐
Types of tests and testing equipment		Gives work directions to workers concerning	
required	☐	duties	☐
Rigging materials and procedures for		Interprets work orders, specifications,	
moving and placing loads	☐	drawings, and technical data for workers	☐
Other (specify)	☐	Trains workers in:	
		Craft duties	☐
Establishes reference points and lines		Operation of machines, machinery, and	
for use in:		equipment	☐
Laying out and lofting hull structures	☐	Use of craft hand and power tools, jigs,	
Laying out of patterns and templates on		and fixtures	☐
materials	☐	Advises workers on methods and procedures	
Positioning vessel over blocks in		for solving work problems	☐
drydocking operations	☐	Coordinates craft activities with those	
Locating position for installation of		of other crafts	☐
structural components, machines, or		Enforces worker compliance with established	
equipment	☐	work procedures, regulations, and safety	
Other (specify)	☐	rules	☐
		Evaluates worker performance	☐
Sets up machines and equipment for other		Recommends worker promotions, discharges,	
workers	☐	and disciplinary actions	☐
Sets up and operates machines and		Requisitions machines, tools, and equipment	
equipment	☐	and services of other crafts	☐
Tends machines or equipment	☐	Keeps production and worker records	☐
Feeds materials into machines	☐	Prepares and submits progress, activity,	
Offbears materials from machines	☐	and accomplishment reports	☐
Other (specify)	☐	Prepares table of offsets for lofting	
		operations	☐
Installs, aligns, and secures:		Compares offset table with table listed on	
Die sets	☐	blueprint	☐
Bending rolls	☐	Measures parts to insure conformance	
Forming rolls	☐	with specifications	☐
Stops	☐	Marks material with fabricating data	☐
Guides	☐	Cuts materials into specified size	☐
Holding fixtures and jigs	☐	Signals workers to perform specific	
Shear blades	☐	operations	☐
Workpiece in fixture or jig	☐	Gives hand signals for hoisting, moving,	
Other (specify)	☐	and lowering operations	☐
		Packs pipe with material to prevent	
Cleans surfaces, tanks, or parts by:		flattening during bending processes	☐
Burning with blowtorch	☐	Heats and bends piping	☐

WHAT THE WORKER DOES—Continued

Bends, hammers, razes, and planishes sheetmetal stock into specified shape	☐	Fastens parts together using:	
Tins metal piping to prevent galvanic or electrolytic action and corrosion	☐	Screws	☐
Sights with transit to position vessel over keel and bilge blocks during drydocking	☐	Bolts	☐
Takes in or slacks off lines to position vessel during drydocking operations	☐	Rivets	☐
Starts or stops pumps to flood, or pump out water from drydock	☐	Dowels	☐
Moves caisson into or from mouth of drydock	☐	Solder	☐
Retubes heat transfer or steam generating equipment	☐	Welds	☐
Moves levers or controls to:		Brazing materials	☐
Start machine fabricating operations	☐	Studs	☐
Reset guides, stops, or roll clearances	☐	Other (specify)	☐
Set length of stroke on ram mechanisms	☐	Installs:	
Stop machines	☐	Planking and decking on vessels	☐
Start auxiliary machines or equipment	☐	Insulating materials on vessels' sides below water line	☐
Other (specify)	☐	Sheetmetal ventilating and air conditioning ducts	☐
Lays out:		Piping systems in vessel	☐
Outlines for constructing patterns, templates, or plugs	☐	Glass in skylights, portholes, and other structures	☐
Fabricating data on material from blueprints	☐	Keel and bilge blocks on platform of drydock	☐
Templates or patterns on material	☐	Structural sheet parts in vessels	☐
Other (specify)	☐	Main propulsion machinery, boilers, and auxiliary machinery and equipment	☐
Builds or constructs:		Electronic systems, equipment, and gear	☐
Templates, patterns, or molds	☐	Electrical equipment, conduits, wiring, and controls	☐
Wooden plugs (master patterns)	☐	Wooden paneling, ships' equipage, and other wood products	☐
Framework and target for bending, shaping, and joining pipe	☐	Deck covering materials on weather decks and other ships' spaces	☐
Holding fixtures or jigs for assembling parts	☐	Insulating materials on boilers, piping valves, and ducts	☐
Keel and bilge blocks for drydocking	☐	Shafting, bearing pedestals, and propellers	☐
Other (specify)	☐	Weapon systems	☐
Reworks fabricated parts by:		Fire control systems	☐
Filing	☐	Vessels' rigging and weight handling gear	☐
Scraping	☐	Hardware, trim, and gaskets	☐
Grinding	☐	Clamps, beam clamps, pad eyes, and other rigging materials	☐
Chipping	☐	Metal furniture and fixtures	☐
Straightening	☐	Wood furniture and fixtures	☐
Bending	☐	Other (specify)	☐
Planing	☐	Erects:	
Other (specify)	☐	Stages and staging for work operations	☐
Positions parts for assembly in:		Antennas, masts, and booms	☐
Holding jig or fixture	☐	Other (specify)	☐
Specified relationship to each other	☐	Operates portable pneumatic tools to:	
Specified alinement	☐	Chip or calk metal plates	☐
Other (specify)	☐	Grind metal surfaces or edges	☐

WHAT THE WORKER DOES—Continued

- | | | | |
|---|--------------------------|--|--------------------------|
| Drill holes | ☐ | Rebuilds, rebricks, and insulates firesides | ☐ |
| Rivet structural steel or sheet metal ducts | ☐ | of steam generating equipment | ☐ |
| Countersink or ream holes | ☐ | Fabricates canvas and other textile covers, | ☐ |
| Other (specify) | ☐ | awnings, and sails | ☐ |
| Tests: | | Attaches hoisting and pulling gear to lift, | ☐ |
| Electrical characteristics of wiring circuits, | | move, and position heavy loads | ☐ |
| electrical or electronic equipment or | | Shapes, finishes, and installs wooden | ☐ |
| systems | ☐ | masts, booms, and spars | ☐ |
| Pressure vessels, piping, ship | | Applies plastics and cloth materials to form | ☐ |
| compartments, and tanks for leaks | ☐ | fibre glass coverings | ☐ |
| Machines, machinery, and equipment for | | Laminates and bends lumber to form | ☐ |
| operational performance | ☐ | wooden ships parts | ☐ |
| Other (specify) | ☐ | Manufactures rigging materials for | ☐ |
| Disassembles and removes machines, | | moving loads | ☐ |
| machinery, or equipment from vessels | ☐ | Covers insulating materials with canvas, | ☐ |
| Disassembles, repairs, and reassembles | | cloth, or other materials | ☐ |
| machines and equipment | ☐ | Other (specify) | ☐ |

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

- | | | | |
|----------------------------|--------------------------|----------------------------------|--------------------------|
| Management | ☐ | Helpers | ☐ |
| General Supervisors | ☐ | Ship's Personnel | ☐ |
| Supervisors | ☐ | Union Personnel | ☐ |
| Craft Workers | ☐ | Wage and Salary Personnel | ☐ |
| Other Craft Workers | ☐ | Employment Personnel | ☐ |
| Planning Personnel | ☐ | Military Liaison Personnel | ☐ |
| Scheduling Personnel | ☐ | Government Personnel | ☐ |
| Estimates | ☐ | Other (specify) | ☐ |
| Apprentices | ☐ | | |

EDUCATION AND TRAINING

Record an "X" to indicate education or training required.

- | | | | |
|---------------------------|--------------------------|------------------------------------|--------------------------|
| Elementary | ☐ | On-the-job Training | ☐ |
| High School | ☐ | Military Training | ☐ |
| Junior College | ☐ | Apprenticeship (see apprenticeship | ☐ |
| Technical Training | ☐ | listing) | ☐ |
| Vocational Training | ☐ | Other (specify) | ☐ |

SHIP AND BOAT BUILDING AND REPAIR APPRENTICESHIPS

Record an "X" to indicate type of apprenticeship training.

- | | | | |
|----------------------------------|--------------------------|-------------------------|--------------------------|
| Boatbuilder, Wood | ☐ | Shipwright | ☐ |
| Coppersmith | ☐ | Sailmaker | ☐ |
| Joiner | ☐ | Sheetmetal Worker | ☐ |
| Loft Worker | ☐ | Pipefitter | ☐ |
| Pipe Coverer and Insulator | ☐ | Boilermaker | ☐ |
| Shipfitter | ☐ | Marine Machinist | ☐ |

SHIP AND BOAT BUILDING AND REPAIR APPRENTICESHIPS—Continued

Shipyard Painter	☐	Welder	☐
Shipyard Rigger	☐	Welder-Fitter	☐
Fire Control Mechanic	☐	Shipyard Patternmaker	☐
Machinist (Ships' weapons)	☐	Other (specify)	☐
Electronics Technician	☐		

SUBJECTS AND COURSES

Record an "X" to indicate subjects or courses that develop skills for the occupation.

Craft Related Subjects and Courses:

Shop Mathematics	☐
Trade Science	☐
Blueprint Reading	☐
Applied Science	☐
Practical Geometry	☐
Algebra	☐
Properties of Metals	☐
Properties of Materials	☐
Use and Care of Measuring Devices	☐
Pneumatics	☐
Hydraulics	☐
Elements of Basic Metallurgy	☐
Applied Chemistry	☐
Elements of Leadership	☐
Foremanship and Supervision	☐
Trade Drawing	☐
Other (specify)	☐

Boatbuilder, Wood:

Introduction to Boatbuilder Trade	☐
Boat Nomenclature	☐
Fastening and Unfastening	☐
Operating Portable Power Tools	☐
Staging	☐
Techniques of Machinery Operation	☐
Methods of Framing	☐
Drydock Work	☐
Applying Insulation	☐
Fabricating Plastics	☐
Boat Construction	☐
Other (specify)	☐

Coppersmith:

Introduction to Coppersmithing	☐
Ship and Shipyard Nomenclature	☐
Materials	☐
Fuel Oil Systems	☐
Lube Oil Systems	☐
Location of Machinery	☐
Fabrication	☐
Salt Water Systems	☐
Potable Water Systems	☐
Steam Systems	☐
Retubing	☐

Testing	☐
Distilling Plants	☐
Compressed Air and Gas Systems	☐
Hydraulic Oil Systems	☐
Radar Wave Guides	☐
Gas Line Systems	☐
Bending and Targeting	☐
Ship Construction	☐
Other (specify)	☐

Joiner:

Introduction to Joiner Trade	☐
Fastening and Unfastening	☐
Operation of Machinery	☐
Various Types of Staging	☐
Applying Insulation	☐
Techniques of Operating Machinery	☐
Techniques of Installing Decking	☐
Installing Covers	☐
Elements of Drydock Work	☐
Methods of Framing	☐
Ship Construction	☐
Other (specify)	☐

Loft Worker:

Laying Out and Lofting Hull Structures	☐
Laying Out and Lofting Hull Fixtures	☐
Establishing Ships' Lines	☐
Developing Templates	☐
Fabricating Templates	☐
Developing Offsets	☐
Operating Machinery	☐
Other (specify)	☐

Patternmaker, Wood:

Foundry Processes	☐
Molds	☐
Patternmaking Handtools	☐
Woodworking Machines	☐
Structural Methods	☐
Pattern Construction Techniques	☐
Pattern Equipment	☐
Making Simple Parted Pattern	☐
Cores and Core Boxes	☐
Cylindrical Patterns and Core Boxes	☐

SUBJECTS AND COURSES—Continued

Flanged Fitting Patterns	☐	Radial Line Development	☐
Segmental Staved Patterns	☐	Installing Structural Assemblies	☐
Match Boards	☐	Triangulation	☐
Pattern and Casting Design	☐	Establishing Working Lines	☐
Patternmaker and the Foundry	☐	Dies, Molds, and Fixtures	☐
Advanced Pattern Layout	☐	Using Table of Offsets	☐
Metal Patterns	☐	Templating from Ship	☐
Valve Patterns	☐	Other (specify)	☐
Propeller and Impeller Patterns	☐		
Involute Pump Casing Patterns	☐	Sheetmetal Worker:	
Double Suction Impeller Patterns	☐	Machine Operation	☐
Complex Cores and Core Boxes	☐	Ventilation Fabrication	☐
Plexiglass Models	☐	Furniture Fabrication	☐
Plaques and Insignias	☐	Galley Equipment Fabrication	☐
Other (specify)	☐	Shipboard Outfitting and Fixture	
		Installation	☐
Pipe Coverer and Insulator:		Sketching	☐
Introduction to the Trade	☐	Programming	☐
Nomenclature of Ships	☐	Materials of Sheetmetal Industry	☐
Shop Practices	☐	Theory of Surface Development	☐
Low Temperature Pipe Coverings	☐	Tool Practices	☐
High Temperature Pipe Coverings	☐	Bench Layout	☐
Ventilation System Insulation	☐	Other (specify)	☐
The Steam Cycle	☐		
Main and Auxiliary Machinery	☐	Pipefitter Ship:	
Machinery Insulation	☐	Introduction to Pipefitting	☐
Refrigeration Piping Systems	☐	Ship and Shipyard Nomenclature	☐
Refrigeration Insulation	☐	Materials	☐
Main and Auxiliary Machinery Insulation	☐	Fuel Oil Systems	☐
Portable Insulation	☐	Lube Oil Systems	☐
Air Conditioning Piping Insulation	☐	Location of Machinery	☐
Refrigeration Piping Insulation	☐	Salt Water Systems	☐
Other (specify)	☐	Sanitary Systems	☐
		Steam Systems	☐
Shipfitter:		Retubing	☐
Introduction to Shipfitting	☐	Chemical Cleaning	☐
Ship Compartmentation	☐	Distilling Plants	☐
Quality Assurance	☐	Compressed Air and Gas Systems	☐
Machine Operations	☐	Hydraulic Oil Systems	☐
Layout Practices	☐	Radar Wave Guides	☐
Shop Assembly Practices	☐	Aircraft Fuel Systems	☐
Structural Ship Repair	☐	Bending and Targeting	☐
Ship Installation Practices	☐	Pipes and Fittings	☐
Types and Uses of Machines	☐	Pipefitting Practices	☐
Welding Theory	☐	Plumbing and Pipefitting Tools	☐
Welding Specifications	☐	Insulation Piping	☐
Pneumatic Tools Operations	☐	High Pressure Pipe Fitting	☐
Riveting Specifications	☐	Sanitary Plumbing Systems	☐
Computing Bond Allowances	☐	Pipe Work	☐
Parallel Line Development	☐	Sizing Pipe for Plumbing	☐
Assembly Procedures for Welding	☐	Hot Water Supply	☐
Methods of Installing Structural Parts	☐	Heating Boilers	☐
Hole Cutting Specifications	☐	Steam Heating Systems	☐
Air and Hydrostatic Testing	☐	Other (specify)	☐

SUBJECTS AND COURSES—Continued

Machinist, Outside:

- Main Propulsion Machinery ☐
- Engineering Auxiliaries ☐
- Underwater Machinery ☐
- Automatic Controls ☐
- Diesel Engines ☐
- Hydraulics ☐
- Aircraft Launching Systems ☐
- Aircraft Recovery Systems ☐
- Other (specify) ☐

Shipyard Painter:

- Introduction to Painting ☐
- Surface Preparation ☐
- Introduction to Spray Painting ☐
- Techniques of Spray Painting ☐
- Brush Painting ☐
- Silk Screening ☐
- Lettering ☐
- Graining ☐
- Paint Mixing ☐
- Paint Matching ☐
- Varnishing and Lacquering ☐
- Touch-up Painting ☐
- Painting Boats ☐
- Deck Covering ☐
- Equipment Painting ☐
- Other (specify) ☐

Machinist (Ships' Weapons):

- Hydraulic Systems ☐
- Main Battery Systems ☐
- 5" Gun Mounts ☐
- 3" Gun Mounts ☐
- Missile Launchers ☐
- Gun Directors ☐
- Principles of Naval Ordnance ☐
- Shop Practices ☐
- Torpedo Tubes ☐
- Underwater Sound Systems ☐
- Other (specify) ☐

Fire Control Mechanic:

- Introduction to Fire Control Mechanics ☐
- Ships' Nomenclature ☐
- Cabling ☐
- Layout and Installation ☐
- Fundamentals of Electricity ☐
- Power Distribution ☐
- Test Equipment Applications ☐
- Fire Control Radar Units ☐
- Troubleshooting Radar Units ☐
- Synchro and Servo Fundamentals ☐
- Fire Control Surface Problems ☐
- Fire Control Air Problems ☐

- Computing Basic Mechanisms ☐
- Radar Fundamentals ☐
- Linear Rate Gun Fire Control Systems ☐
- Radar Transmitters and Timing ☐
- Radar Indicators ☐
- Automatic Tracking Controls ☐
- Other (specify) ☐

Shipyard Electrician:

- Lighting ☐
- Interior Communications ☐
- Power ☐
- Electronic Systems ☐
- Weapon Systems ☐
- Switchboards and Controllers ☐
- Motors and Generators ☐
- Electrical Equipment Systems ☐
- Electrical Test Equipment ☐
- Degaussing Systems ☐
- Indicators ☐
- Other (specify) ☐

Electronics Mechanic:

- Equipment Restoration ☐
- Sonar Restoration ☐
- Communications ☐
- Radar Indicators ☐
- IFF Equipment ☐
- Electronic Countermeasures ☐
- Electronic Test Equipment ☐
- Sonar Systems ☐
- Radar Systems ☐
- Electronics Mechanic (Radar Option) ☐
- Radar Power Supply ☐
- Indicators (RHI) ☐
- Radar Transmitters ☐
- Radar Antennas and Transmission Line ☐
- Servo Mechanisms ☐

Electronics Mechanic (Sonar Option):

- Transducers ☐
- Fathometers ☐
- Scanning Switches ☐
- Preamplifiers and Receivers ☐
- Sonar Indicators ☐
- Sonar Trainers ☐

Electronics Mechanic (Communications Option):

- Communication Receivers ☐
- Receiver Converter Equipment ☐
- Communications Transmitters ☐
- Antenna Tuners, Couplers, Multi-couplers ☐
- Shipboard Communication System ☐
- Other (specify) ☐

SUBJECTS AND COURSES—Continued

Boilermaker:

- Safety and Shipyard Orientation
- Steam, Its History and Advancement
- The Steam Cycle
- Hand and Power Tools
- Boiler
- Types
- Arrangement
- Utilization
- Pressures
- Inspection
- Wear
- Defects
- Repair

- Refitting
- Bricklaying
- Basic Layout
- Tube Installation
- Tube Removal
- Tube Layout
- Tube Bending
- Machine Operations
- Machine Operation Calculations
- Tanks
- Head forming
- Calculating Volume
- Other (specify)

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machines and Equipment:

Metalworking:

Bending machines:

- Bending rolls
- Flanging rolls
- Crimping rolls
- Brakes
- Pipe bending machines
- Tube bending machines

Presses:

- Punch presses
- Dishing machines
- Hydraulic presses
- Bulldozers
- Drill presses

Bending machines:

- Pedestal grinders
- Shearing machines

Cutoff saws

- Abrasive saws

Welding machines:

- Spotwelders
- Resistance welders
- Automatic welding machines

Flame cutting machines

- Pantograph flame cutters

Other (specify)

Woodworking:

- Wood lathes
- Bending machines
- Planers
- Shapes
- Mortisers
- Saws:
- Circular saws

- Bandsaws
- Jigsaws
- Sabre saws
- Variety saws
- Gangsaws
- Jointers
- Patternmaking
- Laminating presses
- Boring machines
- Drill presses
- Steam chambers
- Other (specify)

Lofting machines:

- 1/10 Optical detailing machines
- Other (specify)

Electrical:

- Coil winders
- Battery chargers
- Other (specify)

Tools:

Handtools:

- Adzes
- Augers
- Axes
- Bars:

- Crowbars
- Prybars

Chisels:

- Metal chisels
- Wood chisels

Drills:

- Brace and bits
- High speed twist drills

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Files:

- Metal files ☐
- Wood files ☐

Screwdrivers

- Phillips screwdrivers ☐

Wrenches:

- Allen wrenches ☐
- Box wrenches ☐
- Crescent wrenches ☐
- Monkey wrenches ☐
- Open end wrenches ☐
- Socket wrenches ☐
- Stilson wrenches ☐

Cutters:

- Glass cutters ☐
- Scissors ☐
- Sidecutters ☐
- Wire cutters ☐
- Wire strippers ☐
- Pipe cutters ☐
- Pipe threaders ☐
- Taps ☐
- Reamers ☐

Pullers:

- Bearing pullers ☐
- Gear pullers ☐

Hammers:

- Ballpeen hammers ☐
- Claw hammers ☐

Saws:

- Hacksaws ☐
- Keyhole saws ☐
- Ripsaws ☐
- Crosscut saws ☐

Mauls:

- Copper mauls ☐
- Rubber mauls ☐

Knives:

- Drawknives ☐
- Linoleum knives ☐

Pliers:

- Vise grip ☐
- Channel lock ☐

Heaters:

- Blowtorches ☐
- Hawk torches ☐
- Rivet heaters ☐

Stud drivers

Easy outs

Woodcarving tools

Scribers

Pipe benders

Tube benders

Marlin spikes

- Tongs ☐
- Beltng tools ☐
- Flaring tools ☐
- Rivet bucking tools ☐
- Nail punches ☐
- Paint brushes ☐
- Paint rollers ☐
- Gravers ☐
- Wood planes ☐
- Sledges ☐
- Mallets ☐
- Scrapers ☐
- Other (spec) ☐

Power handtools:

- Buffers ☐
- Calking hammers ☐
- Chipping hammers ☐
- Grinders ☐
- Drills ☐
- Riveting guns ☐
- Soldering guns ☐
- Impact wrenches ☐
- Stapling guns ☐
- Hand held circular saws ☐
- Blind rivet drivers ☐
- Other (specify) ☐

Work Aids:

Mechanical measuring devices:

- Calipers ☐
- Compasses ☐
- Dividers ☐
- Protractors ☐
- Squares ☐
- Quadrants ☐

Gages:

- Center gage ☐
- Dial indicator ☐
- Feeler gage ☐
- Balance gage ☐
- Height gage ☐
- Radius gage ☐
- Screw pitch gage ☐
- Thickness gage ☐
- Thread gage ☐
- Wire gage ☐

Micrometers:

- Depth micrometer ☐
- Flange micrometer ☐
- Inside micrometer ☐
- Outside micrometer ☐
- Swias hole micrometer ☐
- Torque meter ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Angle plates	☐	Optical centering instruments	☐
Rules:		Optical protractor	☐
Depth rule	☐	Transit	☐
Machinist rules	☐	Bore sighting instruments	☐
Steel tape rules	☐	Other (specify)	☐
Other (specify)	☐		
Electrical measuring equipment:		Miscellaneous Work Aids:	
Circuit continuity equipment	☐	Patterns	☐
Impedance measuring equipment	☐	Templates	☐
Ammeters	☐	Formulas	☐
Bridge gages:		Work orders	☐
Kelvin bridge gages	☐	Models	☐
Megohm bridge gages	☐	Records	☐
Vacuum bridge gages	☐	Graphs	☐
Wheatstone bridge gages	☐	Charts	☐
Ohmmeter	☐	Tables	☐
Power factor meter	☐	Offset tables	☐
Phase angle meter	☐	Specifications	☐
Volt ohm millimeter	☐	Test sheets	☐
Microwave test equipment	☐	Holding devices	☐
Radiometer	☐	Jigs	☐
Oscillograph	☐	Boat plugs	☐
Oscilloscope	☐	Specification manuals	☐
Light meter	☐	Stock lists	☐
Other (specify)	☐	Sketches	☐
Optical measuring instruments:		Blueprints	☐
Microscope	☐	Abrasive stones	☐
Optical comparator	☐	Hoists	☐
Polariscope	☐	Chain Hoists	☐
Shadowgraph	☐	Block and Tackle	☐
		Other (specify)	☐

SHIP AND BOAT STRUCTURES, MACHINERY, EQUIPMENT, SYSTEMS, AND SHIPYARD FACILITIES

Record an "X" to indicate structures, machinery, or equipment worked on.

Vessels:		Gasoline engines	☐
Boats:		Boilers:	
Pleasure boats	☐	Fuel oil	☐
Fishing boats	☐	Nuclear power	☐
Speedboats	☐	Reduction gears	☐
Ships:		Engineering auxiliaries:	
Passenger	☐	Pumps	☐
Passenger-Cargo	☐	Evaporators	☐
Cargo	☐	Air compressors	☐
Tankers	☐	Condensers	☐
Naval	☐	Ice machinery	☐
Other (specify)	☐	Deck machinery	☐
Ships machinery and equipment:		Steering engines	☐
Propulsion machinery:		Air ejectors	☐
Steam turbines	☐	Electrical equipment:	
Steam reciprocating engines	☐	Turbo generators	☐
Diesel engines	☐	Diesel generators	☐
		Gas generators	☐

SHIP AND BOAT STRUCTURES, MACHINERY, EQUIPMENT, SYSTEMS, AND SHIPYARD FACILITIES—Continued

Switchboards	☐	Lubricating oil	☐
Lighting systems	☐	Fire main	☐
Intercommunications systems	☐	Potable water	☐
Motors	☐	Salt water	☐
Gyrocompasses	☐	Gasoline	☐
Electronic equipment:		Steam	☐
Radar	☐	Sanitary	☐
Sonar	☐	Electrical wiring systems	☐
Fire Control	☐	Weapons control systems	☐
Weapons control	☐	Damage control systems	☐
Communications	☐	Heating systems	☐
Other (specify)	☐	Instrumentation and controls systems	☐
		Other (specify)	☐
Ships structures:		Shipyards facilities:	
Hull	☐	Drydocks:	
Decks	☐	Graving docks	☐
Superstructures	☐	Floating drydocks	☐
Living spaces	☐	Marine railways	☐
Compartments	☐	Drydock equipment:	
Cabins	☐	Blocks:	
Tanks	☐	Keel blocks	☐
Other (specify)	☐	Bilge blocks	☐
Ships systems:		Cassions	☐
Navigational systems	☐	Staging	☐
Ventilating systems	☐	Cranes	☐
Air conditioning and refrigeration		Craft shops	☐
systems	☐	Other (specify)	☐
Piping systems:			
Fuel	☐		

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial:		Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

TEXTILE MILL WORK

Inventory

WHAT THE WORKER DOES

Below are listed activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates mill activities concerned with:

- Production of yarn from specific type of fiber ☐
- Production of thread from specific type of fiber ☐
- Weaving broad woven fabrics from processed fibers ☐
- Weaving or braiding narrow fabrics from processed fibers ☐
- Finishing, by textile mill processes, fabrics and cloth:
 - On commission basis ☐
 - Purchased materials ☐
 - Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

- Sorting and grading raw materials used in products ☐
- Preparing warp and filling yarn ☐
- Winding and twisting yarn ☐
- Spinning yarn ☐
- Spinning thread ☐
- Weaving cloth ☐
- Washing and scaping cloth ☐
- Mixing dyes or paints for dyeing yarns or printing fabrics ☐
- Dyeing yarn or printing woven fabrics ☐
- Aging printed fabrics ☐
- Finishing fabrics ☐
- Grading fabrics according to design ☐
- Other (specify) ☐

Studies or analyzes:

- Production schedule ☐
- Material specifications ☐
- Processing specifications ☐
- Fabric specifications ☐
- Other (specify) ☐

Determines from data:

- Fiber preparation requirements ☐
- Direction and amount of twist required to produce specified type fibers ☐
- Yarn size, type, texture, and quantity for specified fabric ☐
- Machine setup for specific mill processes ☐
- Pattern chains required ☐
- Yarn or fabric dyeing activities ☐
- Fabric finishing activities ☐
- Processing sequences and requirements ☐
- Manpower requirements ☐
- Other (specify) ☐

WHAT THE WORKER DOES—Continued

Prepares:

- Order sheets ☐
- Warp pattern sheets ☐
- Formula sheets ☐
- Loom setup instructions indicating:
 - Harness size ☐
 - Number of harnesses required ☐
 - Type of heddles ☐
 - Warp ends per inch ☐
 - Sequences of drawing through harness and reeds ☐
- Changes in loom:
 - Shedding ☐
 - Picking ☐
 - Warp let-off ☐
 - Cloth take-up speeds ☐
- Processing schedules ☐
- Production reports ☐
- Work and worker schedules ☐
- Other (specify) ☐

Computes:

- Gear size required to effect required twist on yarn ☐
- Draft required to reduce roving to specified yarn size ☐
- Drafting gear size to stretch roving and reduce roving to size ☐
- Other (specify) ☐

- Assigns workers to specific duties ☐
- Interprets production orders, product specifications, and technical data for workers ☐
- Gives workers directions for performing assigned duties ☐
- Advises workers on methods and procedures for solving work problems ☐
- Reviews laboratory and test results on materials and products ☐
- Orders changes in machine operations or processing methods to meet product specifications, as required ☐
- Coordinates departmental activities with those of other departments ☐
- Requisitions materials and supplies required for production activities ☐
- Trains workers in assigned duties and equipment or machine operations ☐
- Notifies maintenance personnel of needed machine or equipment repairs ☐
- Enforces worker compliance with work procedures, regulations, and safety rules ☐
- Observes workers performing duties to insure their compliance with work directions ☐

- Keeps processing and production records ☐
- Other (specify) ☐

- Sets up machine or range sections for other workers ☐
- Sets up and operates machines or equipment ☐
- Operates machines ☐
- Controls operation of equipment ☐
- Tends:
 - Machines or equipment ☐
 - One section of range ☐
- Feeds materials or inprocess products into machines or equipment ☐
- Offbears materials or products from machines or equipment ☐
- Other (specify) ☐

- Sets up and adjusts textile machines or equipment for specific mill process(es):
 - Reads production orders or set up directions to obtain set up data ☐
 - Determines from data setup procedures or adjustments required ☐
- Disassembles and removes parts or equipment requiring change, such as:
 - Rollers ☐
 - Pulley ☐
 - Pattern chain ☐
 - Pattern control card ☐
 - Gears ☐
 - Beam ☐
 - Harness assembly ☐
 - Rolls ☐
 - Guides ☐
- Selects specified replacement parts ☐
- Installs, aligns, and secures parts or equipment on/in machine ☐
- Turns setscrews or controls to:
 - Set specified clearances between parts ☐
 - Obtain specified tension on materials ☐
 - Obtain specified pressure on materials ☐
 - Synchronize speed of machine or equipment units ☐
 - Regulate speed of rolls or rollers ☐
 - Regulate machine or equipment unit:
 - Pressures ☐
 - Temperatures ☐
 - Vacuum ☐
- Pulls material through:
 - Drop wires ☐
 - Heddles ☐
 - Reed dents ☐
- Threads materials through:
 - Guides ☐
 - Rolls ☐

WHAT THE WORKER DOES—Continued

- | | | | |
|--|--------------------------|---|--------------------------|
| Rollers | ☐ | Measures materials or textile products for | |
| Tension devices | ☐ | conformance with specified: | |
| Stop motion devices | ☐ | Width | ☐ |
| Machine or equipment units | ☐ | Length | ☐ |
| Fastens ends of materials or products onto: | | Thickness | ☐ |
| Loom beam | ☐ | Other (specify) | ☐ |
| Bobbin | ☐ | | |
| Spool | ☐ | Tests: | |
| Rewinding device | ☐ | Chemical solutions for specified | |
| Operates machine or equipment to test setup | | concentration or strength | ☐ |
| for conformance with operational | | Materials or products for: | |
| specifications | ☐ | Type of composition | ☐ |
| Adjusts setscrews, settings, and controls | | Tensile strength | ☐ |
| to obtain specified operation | ☐ | Shrinkage characteristics | ☐ |
| Other (specify) | ☐ | Absorbency capabilities | ☐ |
| | | Fastness of dye | ☐ |
| Turns valves to: | | Crease resiliency | ☐ |
| Fill tanks or vats with specified amounts | | Resistance to fading | ☐ |
| of liquid | ☐ | Other (specify) | ☐ |
| Admit steam into equipment | ☐ | | |
| Heat rollers or solutions | ☐ | Counts number of picks per inch | ☐ |
| Empty tanks or vats of solutions or dyes | ☐ | Records test or inspection results | ☐ |
| Pump materials to processing stations | ☐ | Marks defective materials or products | ☐ |
| Other (specify) | ☐ | Adds chemicals to solution to obtain | |
| | | specified strength | ☐ |
| Inspects or examines: | | Cuts out defective materials | ☐ |
| Inprocess materials for: | | Ties broken ends of fibers or yarn together | ☐ |
| Slubs | ☐ | Rethreads ends of materials through | |
| Holes | ☐ | machines and accessories | ☐ |
| Grease spots | ☐ | Sews trailing and leading edges of cloth | |
| Breaks | ☐ | together for feeding into range | ☐ |
| Tangles | ☐ | Cuts material after specified amount has | |
| Textile fibers or fabrics for: | | been wound on spooler bobbin | ☐ |
| Color runs | ☐ | Doffs filled bobbins, spools, cones, or reels | ☐ |
| Uneven color shades | ☐ | Replaces: | |
| Defects in winding | ☐ | Filled bobbins, spools, cones, or reels | |
| Smudges | ☐ | with empty ones | ☐ |
| Out of register printing | ☐ | Exhausted bobbins, spools, cones, or reels | |
| Other (specify) | ☐ | with filled ones | ☐ |
| | | Beams holding yarn with hoist | ☐ |
| Weighs: | | Pushes racks of materials into equipment | |
| Materials specified on formula for | | for processing | ☐ |
| solutions | ☐ | Patrols section of range to observe | |
| Fabric samples | ☐ | operations | ☐ |
| Fiber samples | ☐ | Notifies supervisory personnel of | |
| Uncoated and coated products | ☐ | malfunctioning equipment or defective | |
| Other (specify) | ☐ | products | ☐ |
| | | Trucks materials to processing stations | ☐ |
| Mixes: | | Reworks defective products by: | |
| Chemical processing solutions | ☐ | Mending | ☐ |
| Dyes | ☐ | Weaving | ☐ |
| Paints for silk screen or fabric printing | | Other (specify) | ☐ |
| operations | ☐ | | |
| Coating materials for products | ☐ | Repairs: | |
| Other (specify) | ☐ | Rebuilds: | |

WHAT THE WORKER DOES—Continued

Replaces:

- Textile mill manufacturing or processing machines or equipment ☐
- Inspects and observes operation of equipment or machine malfunctioning ☐
- Disassembles or removes malfunctioning unit or equipment part ☐
- Examines disassembled parts for:
 - Cracks ☐
 - Excessive wear ☐
 - Alinement of components ☐
 - Cause of malfunction ☐
- Measures parts or spacing of parts for conformance with specifications ☐
- Cleans and polishes metal parts ☐
- Smooths rough edges ☐
- Replaces or repairs parts ☐

Installs, aligns, levels, and secures

- parts in place ☐
- Adjusts clearances between parts ☐
- Test operates machine or equipment for conformance with operational specifications ☐
- Components of machines, as:
 - Half lap needle bars ☐
 - Loom reeds ☐
 - Shuttles ☐
 - Spindles ☐
 - Harness frames and straps ☐
 - Shuttle boxes and binders ☐
 - Reeds ☐
 - Clothing or lining on machine parts ☐
 - Pattern chains on looms ☐
 - Other (specify) ☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

- | | |
|--|---|
| Management ☐ | Workers ☐ |
| Supervisors ☐ | Helpers ☐ |
| Other Supervisors ☐ | Laboratory Personnel ☐ |
| Machine Operators ☐ | Inspection Personnel ☐ |
| Range Operators ☐ | Testing Personnel ☐ |
| Range Tenders ☐ | Other (specify) ☐ |

EDUCATION AND TRAINING

Record an "X" to indicate education and training requirements.

- | | |
|---|--|
| Elementary ☐ | Vocational School ☐ |
| High School ☐ | Apprenticeship ☐ |
| Junior College ☐ | On-the-job Training ☐ |
| Technical School ☐ | Other (specify) ☐ |

MILL MATERIALS AND PROCESSES

Record an "X" to indicate materials and processes used.

Types of raw materials:

Type of fibers:

- Monofilament ☐
- Yarn ☐
- Staple ☐
- Tow ☐
- Other (specify) ☐

- Flax fiber ☐
- Hemp fiber ☐
- Jute fiber ☐
- Mohair ☐
- Silk fiber ☐
- Vicuna hair ☐
- Wool (sheep) ☐
- Other (specify) ☐

Types of organic fibers:

- Alpaca hair ☐
- Angora hair (rabbit or goat) ☐
- Cotton fiber ☐

Types of cellulose man-made fibers:

- Acetate ☐
- Cuprammonium ☐

MILL MATERIALS AND PROCESSES—Continued

Nitrocellulose ☐
 Rayon ☐
 Viscose ☐
 Other (specify) ☐

Types of synthetic organic fibers:

Acrylic ☐
 Acrylonitrile ☐
 Anidex ☐
 Casein ☐
 Elastometric ☐
 Fluocarbon ☐
 Linear esters ☐
 Modacrylic ☐
 Nylon ☐
 Olefin ☐
 Polyester ☐
 Polyvinyl ester ☐
 Polyvinylidene chloride ☐
 Protein ☐
 Saran ☐
 Vinal ☐
 Vinylidene chloride ☐
 Zein ☐
 Other (specify) ☐

Types of mill processes:

Aging ☐
 Balling ☐
 Beaming ☐
 Bleaching ☐
 Blending ☐
 Boiling ☐
 Brushing ☐
 Calendering ☐
 Carbonizing ☐
 Carding ☐
 Coating ☐
 Combing ☐
 Cooling ☐
 Crimping ☐
 Crushing ☐
 Cutting ☐
 Desizing ☐
 Doubling ☐
 Drawing ☐
 Drying ☐
 Dyeing ☐
 Embossing ☐

Extracting ☐
 Finishing ☐
 Flocking ☐
 Folding ☐
 Garnetting ☐
 Impregnating ☐
 Mangling ☐
 Marking ☐
 Mercerizing ☐
 Napping ☐
 Painting ☐
 Picking ☐
 Pleating ☐
 Polishing ☐
 Pressing ☐
 Quilling ☐
 Reeling ☐
 Rolling ☐
 Roving ☐
 Sanforizing ☐
 Shrinking ☐
 Silk screening ☐
 Singeing ☐
 Sizing ☐
 Skeining ☐
 Slivering ☐
 Slubbing ☐
 Spooling ☐
 Spinning ☐
 Splicing ☐
 Splitting ☐
 Sponging ☐
 Spraying ☐
 Spreading ☐
 Starching ☐
 Steaming ☐
 Stretching ☐
 Tentoring ☐
 Texturizing ☐
 Throwing ☐
 Twisting ☐
 Warping ☐
 Washing ☐
 Waterproofing ☐
 Waxing ☐
 Weaving ☐
 Winding ☐
 Other (specify) ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate type of and machines and equipment, tools and work aids.

Types of machines/equipment:

- Automatic ☐
- Continuous processing ☐
- Manually operated ☐
- Multi-purpose ☐
- Pattern controlled ☐
- Semi-automatic ☐
- Other (specify) ☐

Machines/equipment:

- Aniline-dye aging equipment ☐
- Autoclave ☐
- Balling machine ☐
- Batting machine ☐
- Beaming machine:
 - Beam dryer ☐
 - Beam warper ☐
- Bleaching equipment ☐
- Blending machine ☐
- Blowing machine ☐
- Bobbin machines:
 - Bobbin winding machine ☐
 - Bobbin cleaning machine ☐
- Boiling-off equipment ☐
- Braid making machine ☐
- Breaker machine ☐
- Brushing machine:
 - Corduroy brushing machine ☐
 - Steam brushing machine ☐
- Calender ☐
- Carbonizer equipment:
 - Felt carbonizer ☐
 - Wool carbonizer ☐
- Carding machine ☐
- Chinchilla machine ☐
- Clarifier ☐
- Cloth processing machines and equipment:
 - Cloth bleaching range ☐
 - Cloth finishing range ☐
 - Cloth measuring range ☐
 - Cloth mercerizing range ☐
 - Cloth oiling machine ☐
 - Cloth reeling machine ☐
 - Cloth sanding machine ☐
 - Cloth shrinking equipment ☐
 - Cloth skeining and reeling machine ☐
 - Cloth spreading machine ☐
 - Cloth washing machine ☐
- Coating machine:
 - Fabric coating machine ☐
 - Twine coating machine ☐
- Coating and embossing machine ☐

- Combining machine ☐
- Cooling equipment ☐
- Cordage and twine machines:
 - Cord doubling and twisting machine ☐
 - Cord impregnating equipment ☐
 - Paper tape making machine ☐
 - Paper twisting machine ☐
 - Rope strand-forming machine ☐
 - Rope twisting machine ☐
- Covering machine ☐
- Creels ☐
- Crimping machine ☐
- Cutting machine:
 - Corduroy cutting machine ☐
 - Die cutting machine ☐
 - Felt cutting machine ☐
- Decating equipment ☐
- Dampening-spray machine ☐
- Dyeing equipment ☐
- Electrifier equipment ☐
- Embroidery machine ☐
- Extractor ☐
- Felting machine ☐
- Flocking machine ☐
- Frames:
 - Pulling in frame ☐
 - Doubling and twisting frame ☐
- Fulling machine ☐
- Garnetting machine ☐
- Hair picking machine ☐
- Heddles ☐
- Hooking machine ☐
- Humidifying equipment ☐
- Hydraulic press ☐
- Jacquard pattern card cutter ☐
- Kier boiling equipment ☐
- Knot tying machine ☐
- Knife grinding machine ☐
- Lace making machine ☐
- Leasing machine ☐
- London shrinking equipment ☐
- Looms:
 - Jacquard loom ☐
 - Needle loom ☐
 - Loom winding machine ☐
 - Ring loom ☐
- Mangle ☐
- Marking machine ☐
- Mixing machine:
 - Chemical solution mixer ☐
 - Dye mixing machine ☐
 - Size mixer ☐
- Napping machine ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Net making machine	☐
Nicking machine	☐
Opening machine	☐
Bale opening machine	☐
Open soaping machine	☐
Package dyeing equipment	☐
Padding making machine	☐
Pick pulling machine	☐
Plissé machine	☐
Printing machines:	
Drum printing machine	☐
Novelty printing machine	☐
Silk screen printing machine	☐
Quilling machine	☐
Rag picker machine	☐
Reeds	☐
Reeling machines:	
Rope coiling machine	☐
Twine reeling machine	☐
Reeling and tubing machine	☐
Ribbon making machine	☐
Ribbon lapping machine	☐
Roll down machine	☐
Rope processing machines:	
Rope silica washing machine	☐
Rope soaping machine	☐
Rope tarring machine	☐
Roving machine	☐
Roving frame	☐
Sanforizing machine	☐
Schreiner embossing machine	☐
Scouring machine	☐
Sewing machine	☐
Shear grinding machine	☐
Shearing machine	☐
Shuttles	☐
Shuttle boxes	☐
Silk creping machine	☐
Silk spreading machine	☐
Singeing equipment	☐
Sizing equipment	☐
Skein processing machines:	
Skein winding machine	☐
Skein yard-dyeing equipment	☐
Slasher machine	☐
Slitting and twisting machine	☐
Sliver lapping machine	☐
Slubbing machine	☐
Spinning machine	☐
Spooling machine	☐
Spray machine	☐
Staple processing machine	☐
Steaming equipment	☐
Stenciling machine	☐

Striker machines:	
Strike-off machine	☐
Strike-out machine	☐
Super-loft twisting machine	☐
Tailing machine	☐
Taslan machine	☐
Tentering machine	☐
Tenter frame	☐
Thread making machine	☐
Tin-Whiz machine	☐
Top-dyeing equipment	☐
Tufting machine	☐
Twisting machine	☐
Uptwister machine	☐
Unifil machine	☐
Vacuum filter machine	☐
Warping machines:	
Warp coiling machine	☐
Warp dyeing equipment	☐
Warp tying machine	☐
Washing machine	☐
Waste cleaning machine	☐
Waterproofing equipment	☐
Waxing machine	☐
Winding machine	☐
Wool picking machine	☐
Wool washing machine	☐
Worsted winding machine	☐
Wringing machine	☐
Yarn processing machine:	
Yarn bleaching machine	☐
Yarn conditioning-spray machine	☐
Yarn mercerizing machine	☐
Yarn polishing machine	☐
Yarn texturizing machine	☐
Yarn washing and bleaching machine	☐
Yarn winding machine	☐
Other (specify)	☐

Tools:

Handtools:	
Knives	☐
Screwdrivers	☐
Wrenches	☐
Wirebrushes	☐
Needles	☐
Scissors	☐
Rakes	☐
Hammers	☐
Punches	☐
Files	☐
Steel picks	☐
Reed hooks	☐
Other (specify)	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Power tools:

Electric drills ☐
 Grinding wheels ☐
 Soldering irons ☐
 Power rivet guns ☐
 Other (specify) ☐

Te. niometer ☐
 Densitometer ☐
 Tapes ☐
 Other (specify) ☐

Workaids:

Measuring instruments:

Micrometers ☐
 Feeler gages ☐
 Rulers ☐
 Viscosimeter ☐
 Hydrometer ☐
 Grain scales ☐
 Flat gages ☐
 Pin gages ☐

Production orders ☐
 Product specifications ☐
 Material specifications ☐
 Standard samples ☐
 Pattern charts ☐
 Formulas ☐
 Holding devices and jigs ☐
 Production reports ☐
 Requisition forms ☐
 Standard forms ☐
 Other (specify) ☐

PRODUCTS

Record an "X" to indicate products worked on or produced.

Cotton broad woven fabrics:

Airplane cloth ☐
 Alpacas ☐
 Automotive fabrics ☐
 Awning stripes ☐
 Bags and bagging ☐
 Bandage cloth ☐
 Bark cloth ☐
 Basket weave fabrics ☐
 Bathmats ☐
 Batiste ☐
 Bedspreads ☐
 Bird's-eye diaper cloth ☐
 Bombazine ☐
 Book cloth ☐
 Broadcloth ☐
 Brocade ☐
 Buckram ☐
 Bunting cloth ☐
 Cambric ☐
 Camouflage nets ☐
 Canton flannels ☐
 Canvas ☐
 Casement cloth ☐
 Chafer fabrics ☐
 Cheese bandages ☐
 Cheesecloth ☐
 Chenilles ☐
 Chevoits ☐
 Chintz ☐
 Corduroy fabric ☐
 Corset fabric ☐

Cottonades ☐
 Coutil ☐
 Coverts ☐
 Crash toweling ☐
 Crepe ☐
 Cretonne ☐
 Crinoline ☐
 Damasks ☐
 Denims ☐
 Diaper fabrics ☐
 Dimities ☐
 Dishcloths ☐
 Draperies and drapery fabrics ☐
 Dress fabrics ☐
 Drills ☐
 Duck ☐
 Duvetyn ☐
 Elastic fabrics ☐
 Express stripes ☐
 Filter cloth ☐
 Flannette ☐
 Flannels ☐
 Frieze ☐
 Friezette ☐
 Furniture denim ☐
 Gabardine ☐
 Galatea ☐
 Gauze ☐
 Ginghams ☐
 Glass toweling ☐
 Glove fabric ☐
 Grosgrain ☐

PRODUCTS—Continued

Handkerchief fabrics
Hickory stripes
Huck toweling
Interlining material
Jacquard woven fabrics
Jean fabrics
Laundry fabrics
Laundry nets
Lawns
Leno cloth
Long cloth
Luggage fabric
Madras
Marquisettes
Matelasse
Messaline
Mitten flannel
Moleskins
Momie crepe
Mosquito netting
Mualin
Nainsook
Net and Nettings
Opaline
Organdy
Osnaburghs
Outing flannel
Oxfords
Pajama checks
Percal
Percaline
Pile fabrics
Pillow tubing
Pillowcases
Pin checks
Pir. stripes
Piques
Plaids
Plisse crepe
Plushes
Packeting twill
Pongee
Poplin
Press cloth
Print cloths
Ratine
Rep
Romaines
Sail cloth
Sateens
Scrim
Scrub cloths
Seat cover cloth
Seersuckers
Sheets and sheeting

Shirting fabrics
Shoe fabrics
Silesia
Slip cover fabrics
Stretch fabrics
Suiting fabrics
Surgical fabrics
Table cloth fabrics
Table damask
Tapestry fabric
Tartan
Tentage
Terry woven fabrics
Ticking
Tobacco cloths
Towels and toweling
Tracing cloth
Trouserings
Tubing, seamless
Twill
Typewriter ribbon cloth
Umbrella cloth
Upholstery fabrics
Velours
Velveteens
Velvets
Voiles
Waffle cloth
Wash cloths
Wigan
Window shade cloth
Other (specify)

Man-made and silk broad woven fabrics:

Acetate fabrics
Acrylic fabrics
Automobile fabrics
Bedspreads
Blanketings
Canton crepes
Crepe satins
Drapery and drapery fabrics
Dress fabrics
Duvetyn
Elastic fabrics
Failles
Fiberglass fabrics
Flat crepes
French crepes
Fur type fabrics
Georgettes
Glass woven fabrics
Jacquard woven fabrics
Leno fabrics
Linings

PRODUCTS—Continued

Marquisettes	☐	Narrow fabrics:	
Modacrylic fabrics	☐	Apparel webbing	☐
Nylon fabrics	☐	Auto wind lace	☐
Nytril fabrics	☐	Banding	☐
Paper woven fabrics	☐	Beltings	☐
Parachute fabrics	☐	Bindings	☐
Pile fabrics	☐	Braids	☐
Plushes	☐	Cords	☐
Polyester fabrics	☐	Corset laces	☐
Polyethylene woven fabrics	☐	Elastic narrow fabrics	☐
Polypropylene woven fabrics	☐	Elastic webbing	☐
Pongee	☐	Electric insulating tapes and braids	☐
Poplin	☐	Fringes	☐
Quilts	☐	Gimps	☐
Rayon fabrics	☐	Glove lining fabrics	☐
Saran fabrics	☐	Hatband fabrics	☐
Serges	☐	Hose fabrics	☐
Shaatusgs	☐	Labels	☐
Shirting fabrics	☐	Lacings	☐
Silk fabrics	☐	Ribbons	☐
Silk cover fabrics	☐	Rickrack braid	☐
Spandex fabrics	☐	Rubber thread and yarns	☐
Suiting fabrics	☐	Shoe laces	☐
Taffetas	☐	Slide fasteners	☐
Tapestry fabrics	☐	Spindle banding	☐
Twills	☐	Strapping webs	☐
Underwear fabrics	☐	Tapes	☐
Upholstery fabrics	☐	Tie tapes	☐
Velvets	☐	Trimmings	☐
Vinal fabrics	☐	Venetian blind tapes	☐
Vinyon fabrics	☐	Webbing	☐
Voiles	☐	Wicking	☐
Other (specify)	☐	Zipper tape	☐
		Other (specify)	☐
Wool broad woven fabrics:			
Alpacas	☐	Man-made, cotton, and silk yarns:	
Billiard cloths	☐	Acetate yarn	☐
Blankets and blanketings	☐	Acrylic yarn	☐
Felts	☐	Carded yarn	☐
Flannels	☐	Carpet yarn	☐
Haircloth	☐	Combed yarn	☐
Mohairs	☐	Cordage yarn	☐
Overcoatings	☐	Crochet yarn	☐
Pantings	☐	Darning yarn	☐
Papermakers' felts	☐	Embroidery yarn	☐
Serges	☐	Knitting yarn	☐
Skirtings	☐	Modacrylic yarn	☐
Suitings	☐	Nylon yarn	☐
Trouserings	☐	Nytril yarn	☐
Upholstery fabrics	☐	Polyester yarn	☐
Worsted fabrics	☐	Polypropylene yarn	☐
Other (specify)	☐	Rayon yarn	☐

PRODUCTS—Continued

Saran yarn	☐	Lace covers:	
Spinning yarn	☐	Chair covers	☐
Vinal yarn	☐	Dresser covers	☐
Vinyon yarn	☐	Piano covers	☐
Weaving yarn	☐	Table covers	☐
Other (specify)	☐		
Wool yarns:		Laces:	
Crochet yarn	☐	Barmen	☐
Darning yarn	☐	Bobbinet	☐
Embroidery yarn	☐	Levers	☐
Knitting yarn	☐	Nottingham	☐
Rug yarn	☐	Netting	☐
Thread yarn	☐	Other (specify)	☐
Twisting yarn	☐		
Weaving yarn	☐	Processed waste:	
Other (specify)	☐	Carbonized rags	☐
Threads:		Flock	☐
Cotton thread	☐	Oakum	☐
Crochet thread	☐	Packing	☐
Darning thread	☐	Wool Shoddy	☐
Embroidery thread	☐	Other (specify)	☐
Hand Knitting thread	☐		
Nylon thread	☐	Coated fabrics:	
Polyester thread	☐	Type of coating:	
Rayon thread	☐	Impregnated	☐
Sewing thread	☐	Vaminated	☐
Spinning thread	☐	Metalized	☐
Tatting thread	☐	Plastics:	
Other (specify)	☐	Pyroxylin	☐
Miscellaneous Textile Goods:		Resin	☐
Felt Goods:		Varnish	☐
Acoustic felts	☐	Waxed	☐
Automotive felts	☐	Other (specify)	☐
Carpet cushions	☐	Buckram	☐
Insulating felts	☐	Cambrie	☐
Ironing board felts	☐	Glass cloth	☐
Lining felts	☐	Glass mats	☐
Mats	☐	Oilcloth	☐
Pads and Padding	☐	Tape	☐
Pipe and boiler covering	☐	Tubing	☐
Polishing felts	☐	Yarns	☐
Pressed wool felts	☐	Other (specify)	☐
Punched felts	☐		
Trimming felts	☐	Reinforcing cord and fabric:	
Other (specify)	☐	Cord for reinforcing	☐
Lace goods:		Fabric for reinforcing:	
Bed sets	☐	Rubber tires	☐
Curtains and curtain fabrics	☐	Industrial belting	☐
Edgings	☐	Fuel cells	☐
Galloons	☐	Other (specify)	☐
		Non-woven fabrics:	
		Bonded fiber textiles	☐
		Bonded fiber fabrics	☐
		Plastic bonded fiber ribbon	☐

PRODUCTS—Continued

Spunbonded fabrics	☐	Insulator pads	☐
Other (specify)	☐	Wire rope centers	☐
Cordage and twine:		Other (specify)	☐
Cordage types:		Rope:	
Abaca	☐	Blasting mats	☐
Sisal	☐	Nets	☐
Henequen	☐	Slings	☐
Hemp	☐	Other (specify)	☐
Jute	☐	Twine	☐
Other fibers (specify)	☐	Fish nets and seines	☐
Cordage goods:		Fishing lines	☐
Cargo nets	☐	Trawl twine	☐
Braided cord	☐	Binder and baler twine	☐
Fish nets and seines	☐	Other (specify)	☐
Fishing lines	☐		

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial:		Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☐	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

VENEER AND PLYWOOD MILL WORK

Inventory

WHAT THE WORKER DOES

Below are listed activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates activities concerned with manufacture of:

- Veneer ☐
- Plywood ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

- Breaking up raft, and scaling, sorting, grading and sawing logs for operations ☐
- Peeling, clipping, and grading green veneer for further processing ☐
- Glue spreading, layup, and hot pressing plywood sections together ☐
- Finishing hardwood or softwood plywood panels ☐
- Reduction of bark and waste lumber into wood chip or bark products or hog fuel ☐
- Other (specify) ☐

Reviews or studies:

- Production reports ☐
- Daily cutting records ☐
- Job order specifications ☐
- Job orders ☐
- Production schedules ☐
- Drying charts ☐
- Cutting orders ☐
- Shipping orders ☐
- Maintenance and repair reports ☐
- Quality control specifications ☐
- Test forms ☐
- Other (specify) ☐

Plans or determines:

- Production schedules ☐
- Priority of orders ☐
- Sequences of processing orders ☐
- Species and sizes of veneer or plywood to be manufactured ☐
- Manpower requirements ☐
- Manpower utilization ☐
- Machine and equipment requirements and utilization ☐
- Maintenance and repair activities ☐
- Other (specify) ☐

Prepares:

- Work schedules ☐
- Production schedules ☐
- Cutting orders ☐
- Production status reports ☐

WHAT THE WORKER DOES—Continued

Installs, aligns, and secures in position:

- Saws ☐
- Knives ☐
- Cutters ☐
- Pressure rolls ☐
- Guides ☐
- Stops ☐
- Spray guns ☐
- Other (specify) ☐

Presses pushbuttons on machine console or panelboard to:

- Activate power to controls ☐
- Start machine and machine auxiliaries ☐
- Move workpiece into position for machine operations ☐
- Feed workpiece into cutting tools ☐
- Feed tools onto workpiece ☐
- Set machine guides, stops, and tools for specified operations ☐
- Adjust position of tools ☐
- Reprocess material not meeting specifications ☐
- Move workpiece away from processing machine ☐
- Other (specify) ☐

Moves levers or controls, depresses pedals, or turns valves to:

- Set:
 - Pressure of rolls on workpiece ☐
 - Tension on materials ☐
 - Specified temperature, humidity, and air circulation in driers ☐

Align workpiece against:

- Stops ☐
- Guides ☐
- Aligning mechanisms ☐

Regulate:

- Speed of tools ☐
- Travel of workpiece ☐
- Lowering and raising of:
 - Guides ☐
 - Stops ☐
 - Aprons ☐
 - Holding devices or clamps ☐
 - Elevators ☐
 - Stacking tables ☐
 - Unstacking tables ☐
- Other (specify) ☐

Observes:

- Operations of machines for evidences of malfunctions ☐

Gages, meters, and instruments for insuring readings meet operational specifications ☐

Flow of material on material handling equipment to:

- Adjust speed of operation ☐
- Detect misalignment of material ☐
- Detect waste material or foreign matter ☐

Workers for compliance with safety practices and regulations ☐

- Other (specify) ☐

Material, tool, and equipment requisitions ☐

- Inventory reports ☐
- Quality control reports ☐
- Repair and maintenance reports ☐
- Production schedule revisions ☐
- Other (specify) ☐

Coordinates:

- Flow of materials through production departments ☐
- Operation of department with other department activities ☐
- Worker activities ☐
- Other (specify) ☐

Assigns workers to specific duties ☐

Gives workers directions concerning assigned duties ☐

Inspects machines and equipment for function: efficiency ☐

Enforces worker compliance with:

- Established work methods and procedures ☐
- Company regulations ☐
- Safety rules and practices ☐
- Other (specify) ☐

Trains workers in:

- Setup of machines ☐
- Setup and operation of machines, machinery, and equipment ☐
- Controlling equipment ☐
- Performance of assigned duties ☐
- Other (specify) ☐

Evaluates work performance of worker ☐

Initiates personnel actions ☐

Keeps records of worker's time and overtime worked ☐

Recommends changes in processes or use of materials ☐

Other (specify) ☐

WHAT THE WORKER DOES—Continued

Sets up machines for other workers	☐	Clearances between tools	☐
Sets up and operates machines and equipment	☐	Finished veneer or plywood for conformance with dimensional specifications	☐
Operates machines	☐	Other (specify)	☐
Controls operation of automatic machine or equipment	☐		
Tends:		Marks:	
Presetup or automatic machines	☐	Symbols on products to indicate:	
Material handling equipment to move materials and products	☐	Grade	☐
Drives:		Classification	☐
Material handling machines	☐	Reprocessing instructions	☐
Tug	☐	Identifying data on top of:	
Motorized boats	☐	Stacks of veneer or plywood	☐
Feeds material into machines or onto feed conveyors	☐	Wrapped packages of products	☐
Offbears materials from machines or offbearing conveyors	☐	Other (specify)	☐
Other (specify)	☐		
Inspects or examines:		Signals workers to stop or start machines or processing operations	☐
Veneer sheets for:		Patches veneer or plywood to improve quality	☐
Knots	☐	Cuts defective sections from product, using hand or power tools	☐
Splits	☐	Prepares patches for repairing defects in products	☐
Pitch lines	☐	Removes materials from material handling equipment	☐
Damage	☐	Stacks material on four-wheel trucks	☐
Grain	☐	Covers finished veneer with paper to prevent scratches	☐
Determining grade and quality	☐	Shovels or throws waste materials into chipper or hog machine conveyor	☐
Markings on plywood for:		Places slats between sheets of veneer or plywood	☐
Species of wood	☐	Affixes labels to products	☐
Grade and quality code	☐	Lubricates machines	☐
Moisture content	☐	Cleans machines, equipment, and work area	☐
Need of reprocessing	☐	Assists in replacing tools in machines	☐
Need for patching	☐	Other (specify)	☐
Other (specify)	☐		
Measures:			
Length of logs for cutting into machine stock lengths	☐		
Thickness of plywood for determining sanding operations	☐		

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Management	☐	Quality Control Personnel	☐
Superintendent	☐	Machine Operators	☐
Supervisors	☐	Helpers	☐
Other Supervisors	☐	Other (specify)	☐

EDUCATION AND TRAINING

Record an "X" to indicate education and training requirements.

Elementary	☐	High School	☐
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EDUCATION AND TRAINING—Continued

Vocational School ☐ On-the-job training ☐
 Technical School ☐ Other (specify) ☐

SUBJECTS AND COURSES

Record an "X" to indicate subjects and courses that develop worker skills.

Subjects and Courses:

Practical Arithmetic	☐	Veneer Drying	☐
Use and Care of Tools	☐	Log Handling Vehicles	☐
Use and Care of Machinery	☐	Plywood and Laminating Processes:	
Log scaling	☐	Theory of Wood Adhesion	☐
Veneer and Plywood Grading	☐	Chemical Nature of Wood Adhesives	☐
Maintenance of Cutting Tools:		Gluing Process Technology	☐
Hog and Chipper Knives	☐	Wood Drying Technology	☐
Band Saws	☐	Elements of Supervision	☐
Circular Saws	☐	Human Relations	☐
Wood Seasoning	☐	Estimating	☐
		Other (specify)	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Type of machine or equipment:

Automatic	☐	Chain conveyor	☐
Automated	☐	Bull-chain conveyor	☐
Console controlled	☐	Endless-belt conveyor	☐
Electronically controlled	☐	Hoists:	
Manually operated	☐	Electric hoist	☐
Pushbutton operated	☐	Hydraulic hoist	☐
Remote controlled	☐	Lathe charging and cementing machine	☐
Semi-automatic	☐	Log handling machine	☐
Other (specify)	☐	Log handling boats	☐
		Rail-transfer car	☐
		Rotary sorting table	☐
		Tipple	☐
		Triple-tipple	☐
Machines:		Plywood paneling machines:	
Air compressor	☐	Panel presses:	
Barking machines:		Cold press	☐
Drum type	☐	Hot clamp press	☐
Hydraulic type	☐	Heated multi-tiered hydraulic press	☐
Lathe type	☐	Panel sizing machine:	
Ring type	☐	Skinner sizing saw	☐
Block bucking, grading, sorting machine	☐	Panel length cutoff saw	☐
Chipping machine	☐	Panel bagging machine	☐
Clipping machine	☐	Sanding machines:	
Core splitting machine	☐	Belt sander	☐
Glue machines:		Endless belt sander	☐
Edge-gluing machine	☐	Drum sander	☐
Glue mixing machine	☐	Drum and belt sanding machines	☐
Glue spreading machine	☐	Multi-belt sander	☐
Jointer-edge gluing machine	☐	Saws:	
Hog machine	☐	Drag saw	☐
Jointer	☐	Double cut-off saw	☐
Material handling machines:		Gang saw	☐
Conveyors	☐		
Apron conveyor	☐		

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

- Groove cutting machine ☐
- Groove cutting and staining machine ☐
- Shearing machine ☐
- Slicing machine ☐
- Splicing machine ☐
- Veneer peeling lathe ☐
- Veneer finishing machine:
 - Staining machine ☐
 - Waxing machine ☐
 - Polishing machine ☐
- Multi-spindle drill press ☐
- Other (specify) ☐

Tools:

Handtools:

- Brushes ☐
- Chisels ☐
- Handsaws ☐
- Hand irons ☐
- Hand rollers ☐
- Hatchets ☐
- Hooked poles ☐
- Palm and needle ☐
- Peavies ☐
- Pike poles ☐
- Planes ☐
- Pliers ☐
- Prybars ☐
- Riveting tools ☐
- Screwdrivers ☐
- Staple remover ☐
- Scrapers ☐
- Shovels ☐
- Wrenches ☐
- Spatulas ☐
- Knives ☐
- Band cutters ☐
- Branding iron ☐
- Putty knives ☐
- Brooms ☐
- Shovels ☐

Power handtools:

- Portable mixer ☐
- Portable router ☐
- Portable router and saw ☐
- Putty gun ☐
- Sanding board ☐
- Spray gun ☐
- Stapling gun ☐
- Other (specify) ☐

Equipment:

- Cant steaming vats ☐
- Driers:
 - Drying ovens ☐

- Veneer continuous drying system ☐
- Jet drier and feeding system ☐
- Metal detector equipment ☐
- Moisture measuring equipment ☐
- Acetylene cutting equipment ☐
- Welding equipment ☐
- Electrical charge glue drying equipment ☐
- Other (specify) ☐

Work Aids:

- Measuring instruments ☐
- Calipers ☐
- Graduated containers ☐
- Micrometers ☐
- Scales:
 - Bench scales ☐
 - Floor scales ☐
 - Steel tapes ☐
 - Scale sticks ☐
- Other (specify) ☐
- Load tickets ☐
- Identification sheets ☐
- Marking pencils ☐
- Tally sheets ☐
- Formulas ☐
- Wax sticks ☐
- Chalk ☐
- Job order specifications ☐
- Job orders ☐
- Requisitions ☐
- Four-wheel trucks ☐
- Paint applicators ☐
- Quality control specifications ☐
- Daily cutting orders ☐
- Daily cutting records ☐
- Rubber stamps ☐
- Tape dispenser ☐
- Tape ☐
- Sponges ☐
- Labels ☐
- Production orders ☐
- Glue report ☐
- Grade-break-down report ☐
- Coating machine roller log ☐
- Production schedules ☐
- Shipping orders ☐
- Labels ☐
- Magnifying devices ☐
- Testing forms ☐
- Testing reports ☐
- Mirrors ☐
- Other (specify) ☐

PRODUCTS

Record an "X" to indicate products processed or manufactured.

Paneling: Hardwood panels ☐ Softwood panels ☐ Plywood: Hardwood faced plywood ☐ Softwood plywood ☐ Siding ☐	Veneer: Faced veneer ☐ Hardwood veneer ☐ Non-faced veneer ☐ Softwood veneer ☐ Technical veneer ☐ Other (specify) ☐
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ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture ☐ Commercial: Business Service ☐ Food and Beverage ☐ Lodging Service ☐ Personal Service ☐ Printing and Publishing ☐ Repair Service ☐ Sales ☐ Communications ☐ Conservation ☐ Construction ☐ Correctional ☐ Educational ☐ Entertainment ☐ Exhibition Center ☐	Financial ☐ Government Service ☐ Industrial ☐ Insurance ☐ Legal ☐ Library ☐ Medical Service ☐ Military ☐ Nonprofit ☐ Office Service ☐ Recreation ☐ Social Service ☐ Subsurface and Space ☐ Transportation ☐ Utilities ☐ Other (specify) ☐
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WOODWORKING

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Directs and coordinates woodworking activities in a:

- Planing mill ☐
- Wooden container manufacturing company ☐
- Cooperage shop ☐
- Wood fabricating and preserving company ☐
- Plant manufacturing turned, shaped, or carved wooden goods or articles ☐
- Other (specify) ☐

Supervises, and coordinates activities of, workers engaged in:

- Setting up woodworking machines for production operations ☐
- Setting up and operating woodworking machines to produce wood products ☐
- Tending pre-set up machines to produce wood products or parts ☐
- Laying out work for woodworking operations ☐
- Fitting and assembling fabricated wood parts into specified products ☐
- Inspecting parts and final products for conformance with standards ☐
- Handworking wood parts into finished products ☐
- Controlling equipment to treat wood parts or products ☐
- Other (specify) ☐

Plans:

- Manpower requirements ☐
- Work schedules ☐
- Production procedures ☐
- Machine requirements ☐
- Worker training requirements ☐
- Inspection procedures ☐
- Other (specify) ☐

Prepares:

- Cost estimates for jobs ☐
- Estimates on man-hour requirements ☐
- Worker schedules ☐
- Evaluations on worker performance ☐
- Records of production and worker activities ☐
- Reports on production and department activities ☐
- Other (specify) ☐

Trains workers in:

- Overall craft duties ☐
- Setup of machines and equipment ☐
- Operation of machines and equipment ☐

WHAT THE WORKER DOES—Continued

Safety practices	☐	Product layout methods and procedures	☐
Work practices	☐	Product fabricating methods and procedures	☐
Other (specify)	☐	Product assembly methods and procedures	☐
Demonstrates:		Machine or equipment control settings	☐
Setup procedures on woodworking machines	☐	Other (specify)	☐
Use of measuring devices and work aids	☐		
Other (specify)	☐		
Assigns workers to specific duties	☐	Selects and installs on drum, arbor, spindle, or in chuck of machine specified:	
Inspects parts or products for conformance with specifications	☐	Knives	☐
Interprets production orders, product specifications, and drawings for workers	☐	Saws	☐
Advises workers on methods and procedures for solving work problems	☐	Cutters	☐
Enforces worker compliance with established work procedures and safety rules	☐	Drills and bits	☐
Requisitions tools, materials, and equipment	☐	Profiling tools	☐
Coordinates worker and department activities	☐	Abrasive or sanding materials	☐
Other (specify)	☐	Installs, aligns, and secures in machine:	
		Stops	☐
		Guides	☐
		Jigs or holding fixtures	☐
		Workpiece	☐
		Other (specify)	☐
Sets up machines or equipment for other workers	☐	Turns handwheels, opens valves, or moves levers and controls to:	
Sets up and operates variety of woodworking machines	☐	Start machine or equipment	☐
Operates woodworking machine	☐	Adjust angle of machine table	☐
Controls operation of equipment	☐	Feed workpiece into cutting tools	☐
Tends pre-setup or automatic machines	☐	Feed tools onto workpiece	☐
Assists worker in operating machine or equipment	☐	Set cutter heads or tools for prescribed operation	☐
Feeds workpiece or material into machine	☐	Maintain tension on materials	☐
Offbears workpiece or product from machine	☐	Set prescribed clearances between rollers	☐
Other (specify)	☐	Adjust operation of machine	☐
		Reposition guides, stops, and rollers	☐
		Regulate rotation speed of material	☐
Reads, reviews, or examines:		Regulate cutting speed of and pressure of rollers on workpiece	☐
Blueprints	☐	Regulate temperatures, humidity, and material flow	☐
Drawings	☐	Stop machine	☐
Product samples	☐	Other (specify)	☐
Product specifications	☐		
Material lists	☐	Lays out on workpiece:	
Job orders	☐	Patterns	☐
Production orders	☐	Templates	☐
Processing specifications	☐	Cutting lines	☐
Other (specify)	☐	Product design	☐
		Inter-related parts	☐
		Other (specify)	☐
Determines from data:			
Setup of machines or equipment	☐	Fabricates wooden parts of products, using:	
Machine operations required	☐	Woodworking machines	☐
Sequences of work or machine operations	☐		
Type of cutting head or woodworking tool required	☐		

WHAT THE WORKER DOES—Continued

Woodworking handtools ☐ Other (specify) ☐ Assembles parts into products by: Matching grain of inter-related parts ☐ Boring holes in parts for fasteners ☐ Placing inter-related parts together to ascertain fit ☐ Handworking parts to specified fit, using woodworking tools ☐ Fitting and fastening parts together, using: Nails ☐ Dowels ☐ Screws ☐ Glue ☐ Hinges ☐ Pins ☐ Staples ☐ Bolts ☐ Adjusting fit of moving parts of product to specifications ☐ Attaching hardware to parts to complete assembly ☐ Repositioning moving parts to obtain specified fit and prevent binding ☐ Other (specify) ☐ Inspects: Milled or planed lumber for defects, as: Knots ☐ Stains ☐ Pitch pockets ☐ Worm holes ☐ Defective milling or planing ☐ Wood products for defects, as: Mismatched grain ☐ Blemishes ☐ Loose joints ☐	Holes ☐ Splits ☐ Faulty assembly ☐ Missing hardware ☐ Other (specify) ☐ Measures parts or products for conformance with: Dimensional specifications ☐ Specified alignment and squareness ☐ Model or sample ☐ Other (specify) ☐ Grades: Lumber according to standard classifications ☐ Wood products according to extent of defects ☐ Other (specify) ☐ Marks lumber or wood products for rework or salvage of parts ☐ Stacks lumber or wood products ☐ Fills wood pores, cracks, or other indentions with filler materials ☐ Removes foreign material from parts ☐ Sands rough spots to prepare surfaces for finishing ☐ Brushes surfaces with glue to prepare for application of other materials ☐ Marks or stamps grade on products ☐ Changes cutter heads or other tools in machines ☐ Loads and unloads materials into or from: Transportation conveyances ☐ Drying kilns ☐ Stacks lumber or products in storage yard ☐ Rework products to specifications ☐
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COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Management ☐ Supervisors ☐ Other Supervisors ☐ Machine Operators ☐ Craftsman ☐	Helpers ☐ Laborers ☐ Apprentices ☐ Other (specify) ☐
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EDUCATION AND TRAINING

Record an "X" to indicate education and training requirements.

Elementary ☐ High School ☐	Jr. College ☐ Technical Training ☐
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EDUCATION AND TRAINING—Continued

Vocational Training	☐	On-the-job Training	☐
Military Training	☐	Other (specify)	☐

SUBJECTS AND COURSES

Record an "X" to indicate courses and subjects that develop skills for the occupation.

Related Subjects and Courses:

Practical Arithmetic	☐
Applied Chemistry	☐
Care and Use of Handtools	☐
Care and Use of Measuring Instruments	☐
Blueprint Reading	☐
Mechanical Drawing	☐
Trade Terminology	☐
Safety Practices and Regulations	☐
Human Relations	☐
Elements of Supervision	☐
Efficient Use of Materials	☐
Other (specify)	☐

Principles of Layout Processes	☐
Advanced Layout Processes	☐
Fundamentals of Stock Billing	☐
Applied Stock Billing Procedures	☐
Introduction to Hand Woodworking	
Tools	☐
Fundamental Application of Handtool	
Skills	☐
Hand and Power Tool Applications	☐
Introduction to Machine Tools	☐
Fundamentals of Machine Operations	☐
Advanced Machine Operations	☐
Materials of Cabinetmaking	☐
Standards of Construction	☐
Advanced Cabinetry	☐
Estimating of Cabinetry and Paneling	☐
Fundamentals of Wood Molder	☐
Knife Grinding	☐
Detailing and Stock Billing	☐
Other (specify)	☐

Cabinet Making and Millwork:

History and Orientation of Mill:	
Cabinet Work	☐
Applied Blueprint Reading and	
Detailing	☐
Advanced Detailing	☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Machine types:

Automatic	☐
Dual purpose	☐
Electronic	☐
Manual controlled	☐
Multi-purpose	☐
Semi-automatic	☐
Other (specify)	☐

Carving machine:

Single spindle carver	☐
Multi-spindle carver	☐
Chipper	☐

Chucking machines:

Chucking and sawing machine	☐
Double end chucking machine	☐

Clothespin machine	☐
Corrugated fastener machine	☐

Croze machine	☐
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Dadoing machine	☐
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Dovetail machine	☐
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Dowel machines:

Doweling machine	☐
Dowel inserting machine	☐
Dowel pointer machine	☐

Drill press	☐
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Embossing machine	☐
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Framing mill	☐
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Gluing machine	☐
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Grooving machine	☐
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Hoop driving machine	☐
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Incising machine	☐
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Machines:

Adzing and boring machine	☐
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Air compressor	☐
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Bending press	☐
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Boring machines:

Cluster boring machine	☐
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Double end boring machine	☐
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Gang boring machine	☐
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Horizontal boring machine	☐
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Multi-spindle boring machine	☐
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Vertical boring machine	☐
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Box blanking machine	☐
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Box branding machine	☐
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Box lining machine	☐
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MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Jointer machine	☐
Kiln rail transfer machine	☐
Linderman machine	☐
Mortizing machines:	
Chain mortiser	☐
Chisel mortiser	☐
End mortiser	☐
Planer	☐
Plugging machine	☐
Pole peeling machine	☐
Router:	
Single spindle router	☐
Multi-spindle router	☐
Sanders:	
Belt sander	☐
Cylinder sander	☐
Contour sander	☐
Disk sander	☐
Drum sander	☐
Endless belt sander	☐
Lathe sander	☐
Multiple drum sander	☐
Speed belt sander	☐
Stroke belt sander	☐
Turning sander	☐
Saws:	
Band rip saw	☐
Bandsaw	☐
Band scroll saw	☐
Casey saw	☐
Circular rip saw	☐
Dado saw	☐
Double cutoff saw	☐
Gang rip saw	☐
Jigsaw	☐
Miter saw	☐
Multiple cutoff saw	☐
Radial arm saw	☐
Rip saw	☐
Swinging cutoff saw	☐
Table cutoff saw	☐
Tilting saw	☐
Treadle cutoff saw	☐
Variety saw	☐
Warble saw	☐
Shapers:	
Double spindle shaper	☐
Profile shaper	☐
Shaver machine	☐
Squeezer machine	☐
Tenoner machine	☐
Double end tenoner machine	☐
Tying machine:	
Woodworking lathes:	
Back roll lathe	☐

Copy lathe	☐
Handle lathe	☐
Swing type lathe	☐
Other (specify)	☐

Tools:

Adzes	☐
Bits	☐
Chisels	☐
Counterbores	☐
Countersinks	☐
Files	☐
Gouges	☐
Hammers	☐
Levels	☐
Mallets	☐
Planes	☐
Pliers	☐
Putty knives	☐
Rasps	☐
Scribers	☐
Screwdrivers	☐
Vises	☐
Wrenches	☐
Other (specify)	☐

Equipment:

Drying ovens	☐
Kilns	☐
Glue heating units	☐
Preserving and impregnating equipment	☐
Retorts	☐
Other (specify)	☐

Work Aids:

Clamps	☐
Calipers	☐
Diagrams	☐
Blueprints	☐
Drawings	☐
Patterns	☐
Production orders	☐
Templates	☐
Product specifications	☐
Holding fixtures	☐
Jigs	☐
Rules	☐
Sample product	☐
Model	☐
Sketches	☐
Work orders	☐
Rework orders	☐
Inspection reports	☐
Report forms	☐
Straight edge	☐
Square	☐
Other (specify)	☐

MILLWORK AND RELATED WOOD PRODUCTS

Record an "X" to indicate product worked on or produced.

Millwork Products:

Awning	☐
Blinds (shutters)	☐
Brackets	☐
Cabinets (to be built in)	☐
Door trim	☐
Doors	☐
Dormers	☐
Floor baseboard	☐
Garage doors (overhead)	☐
Jalousies (wood frame)	☐
Louver windows (wood frame)	☐
Medicine cabinets (to be built in)	☐
Moldings	☐
Newel posts	☐
Ornamental woodwork:	
Cornices	☐
Mantels	☐
Porch work	☐
Sash, door and window	☐
Shutters, door and window	☐
Stair railings	☐
Staircases and stairs	☐
Trellises	☐
Venetian blind slats	☐
Wainscots	☐
Weather stripping	☐
Window screens (wood frames)	☐
Other (specify)	☐

Prefabricated Buildings and Structural

Members:	
Arches (laminated lumber)	☐
Prefabricated:	
Buildings	☐
Chicken coops	☐
Corn cribs	☐
Houses	☐
Marinas	☐
Portable buildings	☐
Sauna rooms	☐
Structural members:	
Trusses	☐
Timbers	☐
Other (specify)	☐

Wooden Containers:

Nailed and Lock Corner Boxes and Shook:	
Ammunition boxes	☐
Box cleats	☐
Boxes	☐
Carrier trays	☐
Cigar boxes	☐

Egg cases	☐
Greenhouse flats	☐
Packing cases	☐
Shipping cases	☐
Shook	☐
Tool chests	☐
Trunk slats	☐

Wirebound Boxes and Crates:

Boxes	☐
Crates:	
Berry	☐
Butter	☐
Fruit	☐
Vegetable	☐

Veneer and Plywood Containers:

Baskets	☐
Fruit	☐
Vegetable	☐
Berry cups	☐
Drums	☐
Hampers	☐
Market baskets	☐
Pails	☐

Coopered Products:

Barrels	☐
Buckets	☐
Casks	☐
Firkins and Kits	☐
Hogsheads	☐
Kegs	☐
Tanks	☐
Tierces	☐
Tubs	☐
Vats	☐

Shaped Wood Articles:

Applicators	☐
Bakers equipment	☐
Bearings	☐
Beekeeping supplies	☐
Bentwood products	☐
Blocks:	
Butcher blocks	☐
Tackle	☐
Tailor's pressing blocks	☐

Boards:

Bagasse	☐
Bulletin:	
lip	☐
Ironing	☐
Meat	☐
Pastry	☐
Boot and shoe lasts	☐
Bowls	☐

MILLWORK AND RELATED WOOD PRODUCTS—Continued

Bungs	☐	Masts	☐
Bushings	☐	Mauls	☐
Cloth winding reels	☐	Moldings for picture frames	☐
Clothes horses	☐	Oars	☐
Clothes poles	☐	Paint sticks	☐
Clothespins	☐	Pencil slots	☐
Clubs (policemen)	☐	Plugs	☐
Curtain stretchers	☐	Poles:	
Dishes	☐	Flagpoles	☐
Dowels	☐	Tentpoles	☐
Extension plants	☐	Pulleys	☐
Faucets	☐	Rollers	☐
Fellies	☐	Rolling pins	☐
Fenang	☐	Rulers	☐
Frames:		Rules	☐
Medallion	☐	Saddle ~~traps~~	☐
Mirror	☐	Scaffolds	☐
Photograph	☐	Scoops	☐
Picture	☐	Shoe stretches	☐
Furniture inlay	☐	Shoe trees	☐
Garment hangers	☐	Signboards	☐
Gavels	☐	Skewers	☐
Grain measures	☐	Skids	☐
Hammers (meat)	☐	Spars	☐
Hampers	☐	Spigots	☐
Handles for products	☐	Spokes	☐
Hubs	☐	Spools	☐
Industrial platforms	☐	Stakes	☐
Pallets	☐	Toilet seats	☐
Knobs	☐	Toothpicks	☐
Ladders	☐	Trays	☐
Ladder jacks	☐	Trophy bases	☐
Last sole patterns	☐	Wood floor	☐
Letters	☐	Woodenware	☐
Mallets	☐	Yardsticks	☐
Mashers	☐	Other (specify)	☐

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Entertainment	☐
Commercial:		Exhibition Center	☐
Business Service	☐	Financial	☐
Food and Beverage	☐	Government Service	☐
Lodging Service	☐	Industrial	☐
Personal Service	☐	Insurance	☐
Printing and Publishing	☐	Legal	☐
Repair Service	☐	Library	☐
Sales	☐	Medical Service	☐
Communications	☐	Military	☐
Conservation	☐	Nonprofit	☐
Construction	☐	Office Service	☐
Correctional	☐	Recreation	☐
Educational	☐	Social Service	☐

ENVIRONMENTAL SETTING—Continued

Subsurface and Space ☐ Utilities ☐
Transportation ☐ Other (specify) ☐

EXAMPLE OF DATA GATHERING USING A TASK INVENTORY

The following pages illustrate the use of a Task Inventory in collecting information from a worker. A CARPENTER who has worked in the craft for many years was interviewed using the inventory for "Building and Construction Trades." The items checked indicate the range of experience which a typical worker has gained. It will be noted that even some supervisory tasks have been checked because of work performed as a lead CARPENTER. The information from a completed Task Inventory can be used to develop a job description and to identify specific knowledges and skills which are required to perform the work. The user can also gain information from items not checked.

Typically, a CARPENTER constructs, erects, installs, and repairs structures the primary components of which are made of wood, using carpentry handtools and power tools and following blueprints or sketches. The worker also builds stairs, install partitions and cabinets, hangs doors, installs metal hardware on wood parts, weather strips and insulates wooden structures, fits and installs trim, wallboard, paneling and windows, and lays sub-floor and hardwood flooring. The worker builds and erects foundation forms and attaches siding of various types to the exterior of buildings. Almost any structure utilizing wood framing or scaffolding requires the CARPENTER'S craft in building. Some workers specialize in certain aspects of the craft and perform only those items peculiar to the specialty and belong to union locals that are designated for that type of work. The following inventory with marked responses indicates the worker's involvement with specific job factors.

EXAMPLE
BUILDING AND CONSTRUCTION TRADES: CARPENTER

Inventory

WHAT THE WORKER DOES

Listed below are activities that might be involved in a job-worker situation. Record an "X" after each activity relating to the job being analyzed.

Supervises, and coordinates activities of, workers engaged in building and construction craft activities as:

Carpentry	☒
Plastering	☐
Waterproofing	☐
Concrete masonry	☐
Bricklaying	☐
Stone setting	☐
Tile setting	☐
Pipefitting	☐
Structural steel erection	☐
Plumbing	☐
Asbestos and insulation work	☐
Paperhanging	☐
Lathing	☐
Pipelaying	☐
Concrete and asphalt paving	☐
Floorlaying	☐
Glaziery	☐
Roofing	☐
Rigging	☐
Elevator constructing	☐
Tank building and erecting	☐
Marble setting	☐
Monument setting	☐
House moving	☐
Ornamental and architectural iron erection	☐
Mining	☐
Drywall applying	☒
Insulating work	☒
Other (specify)	☐

Operating equipment as:

Grading equipment	☐
Excavating equipment	☐
Concrete paving equipment	☐
Asphalt paving equipment	☐
Dredging equipment	☐
Pile driving equipment	☐
Welldrilling equipment	☐
Tunneling equipment	☐
Other (specify)	☐

WHAT THE WORKER DOES—Continued

Materials:		Pave highways and streets	☐
Handling equipment	☐	Dredge sand and other materials	☐
Transporting equipment	☐	Drive pilings	☐
Mixing equipment	☐	Drill wells	☐
Pumping equipment	☐	Bore tunnels	☐
Other (specify)	☐	Handle materials	☐
Tending:		Transport materials	☐
Concrete or plaster:		Mix materials	☐
Batching equipment	☐	Pump materials	☐
Pumping equipment	☐	Other (specify)	☐
Spraying equipment	☐		
Other (specify)	☐	Moves levers, turns controls, or	
Plans and determines:		depresses pedals to:	
Manpower requirements	☐	Start or stop equipment	☐
Worker schedules	☐	Guide or steer equipment	☐
Construction procedures	☒	Position attachments for specific	
Maintenance procedures	☒	operations	☐
Inspection requirements	☒	Perform operations	☐
Prepares work schedules	☒	Reposition attachments or	
Assigns workers to duties	☒	equipment	☐
Gives work directions to workers	☒	Other (specify)	☐
Interprets building plans, structural		Tends equipment or machines to:	
specifications, drawings, and technical		Mix batches of concrete, plaster, or other	
data	☒	covering materials	☐
Trains workers in:		Pump concrete, plaster, or other	
Craft duties	☒	materials	☐
Operation of machines and equipment	☒	Spray materials on structure	☐
Safety practices and regulations	☒	Maintain pressure in underground	
Advises workers in methods and procedures		structures or chambers (locks)	☐
for solving work problems	☒	Other (specify)	☐
Coordinates:		Constructs, erects, or builds:	
Craft activities with other craft activities	☐	Wooden structures and fixtures	☒
Worker activities	☒	Structural steel framework	☐
Building inspection activities	☐	Tanks	☐
Enforces worker compliance with		Concrete forms and pour chutes	☒
established work procedures, regulations,		Scaffolding	☒
and safety rules	☐	Fences	☒
Recommends promotions, demotions,		Metal framework	☐
discharges, and disciplinary		Stairways	☒
actions	☒	Elevators or moving stairways	☐
Evaluates workers performance	☒	Other (specify)	☐
Requisitions materials, tools, and		Sets:	
equipment	☒	Marble slabs or blocks	☐
Requisitions machine maintenance		Stone	☐
and repair	☒	Tile	☐
Keeps records of workers performance	☐	Artificial stone	☐
Prepares reports on construction or		Monuments	☐
maintenance activities	☒	Other (specify)	☐
Other (specify)	☐	Fits and installs:	
Operates equipment to:		Steam, gas, water, or acid piping systems	☐
Grade construction sites	☐	Plumbing systems and fixtures	☐
Excavate earth and other materials	☐		

WHAT THE WORKER DOES—Continued

Pneumatic tube conveyor systems	☐	Concrete surfaces	☐
Pneumatic control system piping	☐	Plaster surfaces	☐
Cabinets	☒	Stucco surfaces	☐
Window frames	☒	Other (specify)	☐
Partitions	☒		
Doors	☒	Reviews, studies, or analyzes:	
Door frames	☒	Blueprints	☒
Weather stripping	☒	Sketches	☒
Wooden trim	☒	Building plans	☒
Metal hardware	☒	Architects drawings	☒
Structural steel	☒	Bills of materials	☒
Structural glass	☐	Work order specifications	☒
Other (specify)	☐	Structural specifications	☒
		Construction plans	☒
		Contract specifications	☒
		Other (specify)	☐
Lays:		Determines:	
Brick structural tile and block materials	☐	Building sequences	☒
Terrazzo floors	☐	Construction sequences	☒
Flooring and subflooring	☒	Installation sequences	☒
Floor coverings and foundation materials	☐	Methods and procedures for specified work	☒
Pipe for storm drains, sewers, and water mains	☐	Other (specify)	☐
Other (specify)	☐		
Applies:		Calculates:	
Composition weatherboard on exterior surfaces	☒	Material requirements	☒
Siding materials on exterior surfaces	☒	Equipment requirements	☒
Decorative and protective paint on building surfaces	☐	Job costs	☒
Stucco on exterior surfaces	☐	Building angles and courses	☒
Plasterboard onto walls and ceilings	☒	Other (specify)	☐
Waterproofing material on exterior surfaces	☒	Measures:	
Calking compounds in cracks and crevices	☒	Structural areas	☐
Coats of plaster on interior surfaces	☐	Dimensions of structure	☒
Sizing compound on work surfaces	☐	Material length, width, or thickness	☐
Roofing materials on structures	☐	Other (specify)	☐
Insulating materials on equipment and piping systems	☐	Selects specified materials	☐
Other (specify)	☐	Lays out:	
Fastens:		Reference points and lines	☒
Lathing materials on walls and ceilings	☐	Material cutting lines	☒
Acoustical tile on ceilings	☐	Assembly lines	☐
Facing brick on sides of structures	☐	Work guidelines	☒
Insulation materials onto walls, floors, and ceilings	☐	Foundation lines	☒
Paneling on walls	☒	Grading lines	☒
Other (specify)	☐	Fence lines	☒
		Other (specify)	☐
Blows insulating materials into spaces of structures	☐	Prepares surfaces or areas for work by:	
Finishes:		Sanding	☒
Wooden floors	☒	Cleaning	☒
		Chipping	☐
		Scraping	☐

WHAT THE WORKER DOES—Continued

Filling holes, cracks, crevices, or joints	☐	Braces	☒
Sealing	☐	Putty	☐
Sealing	☐	Other (specify)	☐
Removing fixtures or obstacles	☐	Mixes by hand machine:	
Masking or covering non-work areas	☐	Paint pigments, vehicle, and coloring	☐
Removing rough or defective surfaces	☐	Wallpaper paste	☐
Other (specify)	☐	Sealing compounds	☐
Cuts material into specified:		Mortar	☐
Shape	☒	Other (specify)	☐
Size	☒	Verifies alinement of:	
Length	☒	Parts	☒
Width	☒	Structures	☒
Thickness	☒	Stone	☐
Other (specify)	☐	Brick	☐
Spreads:		Installation	☐
Concrete to specified depth	☐	Other (specify)	☐
Mortar on brick, structural tile, blocks and other materials	☐	Breaks or cuts off excess material	☒
Stucco onto exterior surfaces	☐	Drills hole for:	
Plaster onto walls or over lathing	☐	Attaching material on structures	☒
Mastic or other adhesive on floor or foundation coating	☐	Installing material	☒
Paste on wallpaper	☐	Fills joints with:	
Putty on sash of windows	☐	Calking materials	☐
Other (specify)	☐	Lead	☐
Joins, secures, or fastens material by:		Calking compound	☐
Nails	☒	Sealing compound	☐
Metal straps	☒	Mortar	☐
Staples	☒	Other (specify)	☐
Dowels	☒	Cuts and bends:	
Threaded joints	☒	Pipe into specified size and shape	☐
Calked joints	☒	Lathing to fit openings, corners, and projections	☐
Rivets	☐	Thread pipe	☐
Soldered joints	☐	Digs foundation trenches	☐
Brazing	☐	Pours concrete foundations	☐
Welding	☒	Mounts hanger and brackets	☒
Wire	☒	Replace defective piping	☐
Hangers	☒	Brushes, sprays, or rolls paint on surfaces	☐
Brackets	☒	Cleans equipment and tools	☐
Screws	☒	Matches design and pastes paper on wall	☐
Bolts	☒	Polishes stone or marble	☐
Anchor bolts	☒	Positions glass in window sashes	☐
Cement	☐	Assembles glass doors and windows in metal frames	☐
Adhesive	☐	Smooths wallpaper on wall	☐
Mastic	☐	Inspects piping system for defects	☐
Glazier points	☐	Tests piping systems for leaks	☐
Mortar	☐	Paints and insulates pipes and fittings	☐
Pins	☒	Molds concrete expansion joints	☐
Glue	☒	Repairs defects in material	☐
Clips	☒	Presses brick or tile into mortar	☐
Tie rods	☐		

WHAT THE WORKER DOES—Continued

Nails or cements waterproof materials on roof	☐	Guides nozzle of calking gun along crevices in structure	☐
Digs postholes and sets posts	☐	Presses lever to discharge compound into crevice	☐
Stretches wire and attaches it onto posts	☐	Carries materials to craftsmen	☐
Replaces leaky faucet washers	☐	Stacks materials adjacent to worker	☐
Opens clogged drains	☐	Cleans finished structures	☐
Attaches molding around windows, doors, and other openings	☐	Signals operating personnel actions to be taken	☒
Directs workers to mix plaster or other materials	☐	Attaches slings onto material for hoisting operations	☒
Wires lathing strips on furring	☐	Guides material into position	☐
Wires lathing channels onto overhead structural framework	☐	Positions beams for supporting structure	☒
Presses sealing tape over compound and joints in drywall	☐	Jacks house up and places dollies under beams	☐
Fills hopper of mixing machine with materials	☐	Attaches towing bar onto dollies	☐
Turns valves to regulate pumps and air compressor	☐	Other (specify)	☐

COMMUNICATION RESPONSIBILITIES

Record an "X" to indicate communication responsibilities.

Building Contractor	☒	Workers	☒
Trade Contractor	☐	Helpers	☒
Construction Superintendent	☒	Apprentices	☒
Supervisors	☐	Other (specify)	☐
Supervisors of Other Trades	☐		

EDUCATION AND TRAINING

Record an "X" to indicate education or training required.

Elementary	☐	Technical Training	☐
Junior High School	☐	On-the-job Training	☐
High School	☐	Apprenticeship Training (see appendix listing)	☒
Junior College	☐	Other (specify)	☐
Vocational School	☐		

BUILDING TRADES AND CONSTRUCTION APPRENTICESHIPS

Record an "X" to indicate type of apprenticeship training.

Asbestos and Insulation Worker	☐	Lather	☐
Bricklayer	☒	Marble Mason	☐
Carpenter	☒	Painter and Decorator	☐
Cement Mason	☐	Paperhanger	☐
Elevator Constructor	☐	Pipefitter	☐
Floor Layer	☐	Plasterer	☐
Glazier	☐	Plumber	☐
Iron Worker	☐	Roofer	☐
Ornamental Iron Worker	☐	Sprinkler Fitter	☐
Reinforcing Worker	☐	Steamfitter	☐
Structural Steel Worker	☐	Stone Mason	☐

BUILDING TRADES AND CONSTRUCTION APPRENTICESHIPS—Continued

Terrazzo Worker	☐	Pile Driver	☐
Tile Setter	☐	Hoisting and Portable Equipment Operator	☐
Operating Engineer:		Other (specify)	☐
Construction Equipment Operator	☐		
Dredge Operator	☐		

SUBJECT AND COURSES

Record an "X" to indicate subjects or courses that develop skills for the occupation.

Trade Related Subjects and Courses:		Tool Terminology	☐
Applied Science	☐	Tool Description, Purposes, and Uses	☐
Applied Chemistry	☐	Functional Principles of Masonry	
Applied Physics	☐	Tools	☐
Architectural Drawing	☒	Types of Bonding Materials	☐
Blueprint Reading	☒	Types and Uses of Reinforcing Materials	☐
Building Regulations and Codes	☒	Safe Use of Tools, Scaffolding, and Materials	☐
Electrical Theory	☐	Mixing and Application of Mortars	☐
Electronic Theory	☐	Laying of:	
Interpretation of Drawings	☐	Cement Blocks	☐
Estimating	☐	Common Brick	☐
Foremanship and Supervision	☐	Architectural Terra Cotta	☐
Human Behavior	☐	Facing Brick	☐
Inspection	☐	Refractory Brick	☐
Practical Geometry	☐	Construction of:	
Practical Trigonometry	☐	Walls	☐
Safety Practices	☒	Corners	☐
Safety Regulations	☒	Angles and Courses	☐
Sketching	☒	Pilasters	☐
Trade Mathematics	☐	Piers	☐
Trade Science	☐	Footings	☐
Welding	☒	Columns	☐
Other (specify)	☐	Chimneys	☐
		Smokestacks	☐
		Fireplaces	☐
		Hearths	☐
		Reinforced Masonry	☐
		Cleaning and Preparing Surfaces	☐
		Pointing	☐
		Calking and Grouting	☐
		Other (specify)	☐
Trade Theory:			
Asbestos and Insulation Worker	☐		
Insulating Materials	☐		
Pipe Coverings	☐		
Insulating:			
Steam Piping	☐		
Ventilation Systems	☐		
Machinery and Equipment	☐		
Refrigeration Equipment	☐		
Refrigeration Piping	☐		
Air Conditioning Piping	☐		
Methods of Application	☐		
Tools and Their Uses	☐		
Insulation Covering Materials	☐		
Methods of Covering Insulation	☐		
Other (specify)	☐		
Bricklayer:			
History of Masonry	☐		
Masonry Materials	☐		
Application of Masonry Materials	☐		
		Carpenter:	
		History and Orientation	☐
		Introduction to Handtools and Materials	☒
		Handtool Skills	☐
		Principles of Machine Tools	☐
		Machine Tools Operation	☐
		Forms, Foundations, and Concrete	☒
		Principles of Construction	☒
		Framing Construction	☒
		Principles of Exterior Finish	☐
		Application of Interior Finish	☐

SUBJECTS AND COURSES—Continued

Introduction to Stairbuilding	☒	Methods of Cutting and Installing:	
Layout and Construction of Stairs	☒	Glass	☐
Heavy Construction Principles	☒	Mirrors	☐
Form Detailing and Construction	☒	Glass Doors and Partitions	☐
Hardware and Installation	☒	Manufacture and Preparation of:	
Door Hanging	☒	Insulated Glass Units	☐
Cabinet Work	☒	Corrugated Glass Units	☐
Other (specify)	☐	Types and Application of Structural	
		Glass	☐
		Other (specify)	☐
Cement Mason:		Iron Worker:	
Masonry Materials	☐	History and Scope of Ironworking Trade	☐
Trade Tools and Equipment	☐	Rope Knots and Hitches	☐
Forms and Form Construction	☐	Care and Handling of Rope	☐
Working Characteristics of Materials	☐	Handtools	☐
Concrete Working Techniques	☐	Cable Working Loads	☐
Concrete Finishing Techniques	☐	Hardware	☐
Expansion Joints	☐	Cranes, Derricks, and Poles	☐
Concrete Handwork	☐	Principles of Ironworking Trade	☐
Concrete Machine Work	☐	Structural Principles:	
Other (specify)	☐	Ornamental Principles	☐
Elevator Constructor:		Reinforced Iron Principles	☐
Materials and Equipment Controls	☐	Materials of Trade:	
Installing:		Rolled Steel Shapes	☐
Guide Rails	☐	Rolled Sheet Steel	☐
Hoisting Equipment and Motors	☐	Corrugated Materials	☐
Counterweights	☐	Fabricated Steel Shapes	☐
Control Systems	☐	Ornamental Materials	☐
Signaling Equipment	☐	Fasteners	☐
Safety Devices	☐	Classes of Leverages	☐
Elevator Testing and Adjusting	☐	Gears and Ratios	☐
Elevator Maintenance and Repair	☐	Weights of Materials	☐
Other (specify)	☐	Care and Use of Transit	☐
		Scaffolding and Ladders	☐
Floor Layer:		Structural Steel Erection	☐
Materials of Trade	☐	Machinery, Moving and Rigging:	
Types of Adhesives	☐	Reeving of Rope	☐
Surface Preparation	☐	Use and Care of Wire Rope	☐
Work Layout	☐	Splicing of Fiber and Wire Rope	☐
Material Cutting, Fitting, Molding	☐	Rigging Hardware and Attachments	☐
Trade Tools and Equipment	☐	Hoisting Equipment	☐
Tile Laying Techniques	☐	Guy Lines and Anchorages	☐
Linoleum Laying Techniques	☐	Jacks, Rolls, and Skids	☐
Other (specify)	☐	Structural Steel Erection:	
Glazier:		Fabrication Procedures	☐
Trade History and Orientation	☐	Material Identification	☐
Trade Tools and Equipment	☐	Material Handling and Transporting	☐
Materials	☐	Connecting, Hooking-on, Taglining	☐
Glass Specifications	☐	Plumbing and Leveling	☐
Types and Qualities of:		Mechanical Fasteners	☐
Glass	☐	Connections of Structural Steel	☐
Metal	☐	Structural Rigging	☐
Special Fastening Devices	☐	Parts and Erection Methods of:	
Job Site Layout Methods	☐	Towers	☐

SUBJECTS AND COURSES—Continued

Buildings	☐	Materials of Trade and Uses	☐
Bridges	☐	Basic Uses of Trade Tools	☐
Structural Safety	☐	Laws Governing Worker	☐
Signalling Methods	☐	Preparing Colors and Materials	☐
Reinforcing Ironwork	☐	Methods of Applying Materials	☐
Identification of Materials	☐	Hardwood and Hardwood	☐
Hand and Bending Tools	☐	Finishes	☐
Fabrication	☐	Architecture: Decorating	☐
Accessories	☐	Practices and Finishes	☐
Unloading and Sorting of	☐	Basic Graining and Marbling	☐
Materials:	☐	Mixing and Matching of color	☐
Types of Material Ties	☐	Principles of Color Harmony	☐
Footings	☐	Color Chemistry	☐
Placing	☐	Psychology of Color	☐
Joint Preparation	☐	Care of Tools and Equipment	☐
Welding Procedures	☐	Other (specify)	☐
Ornamental Ironwork:	☐	Paperhanger:	☐
Handtools	☐	Materials of Trade	☐
Drills and Tap	☐	Tools of Trade	☐
Doors and Elevator Fronts	☐	Selection and Use of Tools	☐
Curtain Wall Construction	☐	Preparation of Surfaces	☐
Sashes	☐	Application of:	☐
Stairways	☐	Wallpaper	☐
Handrails	☐	Canvas	☐
Layout	☐	Muslin	☐
Fasteners	☐	Fabrics	☐
Sheeting and Fencing:	☐	Systems of Color Notation	☐
Sheeting Materials	☐	Principles of Color Harmony	☐
Sheeting Erection Methods	☐	Other (specify)	☐
Service Station Materials	☐	Plasterer:	☐
Service Station Erection Methods	☐	History and Development of Trade	☐
Fencing Materials	☐	Chemistry of Plastering Materials	☐
Fencing Erection Methods	☐	Proportions of Materials	☐
Other (specify)	☐	Lath and Masonry Bars	☐
Lather:	☐	Plastering Materials	☐
Lathing Materials	☐	Job Conditions affecting Plastering	☐
Trade Tools and Equipment	☐	Plaster Cracks and Causes	☐
Lathing Methods and Techniques	☐	Dotting, Pressed Screeds, and	☐
Specifications for Lathing	☐	Water Leveling	☐
Lathing and Metal Layout	☐	Job Layout Problems	☐
Structural Components	☐	Acoustical Plastering	☐
Lathing Accessories	☐	Effect of Weather on Plastering	☐
Installation of:	☐	Effect of Poor Construction and	☐
Lathing	☐	Application	☐
Lathing Accessories	☐	Mitering Breaks and Returns	☐
Lathing:	☐	Geometrical Layout Problems	☐
Partitions and Walls	☐	Molding and Casting	☐
Ceilings	☐	Application of Materials	☐
Exterior Surfaces	☐	Finishing Surfaces	☐
Other (specify)	☐	Other (specify)	☐
Painter and Decorator:	☐	Pipe and Steam Fitter:	☐
History and Background of Trade	☐	History and Development of Trade	☐
Health and Safety Measures	☐		

SUBJECTS AND COURSES—Continued

Science of Heating and Refrigeration	☐	Procedures of Waterproofing and	
Dimension Standards	☐	Damproofing	☐
Characteristics and Use of Piping	☐	Other (specify)	☐
Mathematical Measurements	☐		
Steam Power	☐	Sprinkler Fitter:	
Process Piping, Theory and installation	☐	History of Trade	☐
Principles of Heating Systems	☐	Classes of Systems	☐
Operation of Heating Systems	☐	Elements of Design	☐
Standards for Heating Equipment	☐	Underground Piping	☐
Low Pressure Heating Systems	☐	Sprinkler Heads	☐
Air Conditioning	☐	Valves	☐
Plumbing Fixtures, Installation,		Dry System	☐
Applications, Testing, Servicing	☐	Mechanical Alarms	☐
Layout and Installation of Air		Electric Alarms	☐
Conditioning Piping System	☐	Fire Department Connection Alarms	☐
Other (specify)	☐	Supervisory Alarms	☐
		Special Sprinkler Systems	☐
Plumber:		Thermostatically Controlled Systems	☐
Plumbing Materials	☐	Details of Systems Installation and Design	☐
Trade Tools and Uses	☐	Rigging and Scaffolding	☐
Principles and Practices of Water		Elements of Costs	☐
Supply and Distribution	☐	Job Planning	☐
Formulas	☐	Other (specify)	☐
Charts and Conversion Tables	☐		
Coefficients and Factors	☐	Stone Mason - Marble Mason:	
Pipe Size Calculations	☐	History of Masonry Trade	☐
Structural Standards of Fixture Design	☐	Application of Masonry Methods	☐
Fixtures and Special Applications	☐	Tool Terminology	☐
Layout for Plumbing and Pipefitting	☐	Tool Descriptions, Purposes, Uses	☐
Composition, Manufacture, and General		Functional Principles of Masonry Tools	☐
Specifications for Pipe and Fittings	☐	Masonry Materials	☐
Bacteriological Considerations	☐	Types of Bonding Materials	☐
Backflow Conditions and Prevention	☐	Types and Uses of Reinforcing and	
System Design for Prevention of Water		Fastening Materials	☐
Pollution	☐	Mixing and Application of Bonding	
Conventional and Practical Layout		Materials	☐
Methods	☐	Layout of Work	☐
Piping Layout	☐	Fitting and Setting of Material	
Layout Methods	☐	on Walls, Floors, Stairs, and	
Fabrication and Erection of Piping	☐	Arches	☐
Installation and Testing of Plumbing		Cleaning of Materials	☐
Fixtures and Appliances	☐	Pointing and Grouting	☐
Other (specify)	☐	Preparation of Working Surfaces	☐
		Other (specify)	☐
Roofer:		Tile Setter:	
Materials of Trade	☐	History of Tile, Mortar, and Materials	☐
Use and Care of Tools and Equipment	☐	Tools of Trade and Uses	☐
Preparation of Work Surfaces	☐	Surface Preparation	☐
Installation Methods for Slate,		Work Layout	☐
Tile, Terra Cotta, Paper	☐	Use of Hawk and Trowel	☐
Application Methods for Tar, Pitch, Asphalt,		Strip Setting	☐
Gravel, and Paper	☐	Open Joint and Cove Installation of	
Principles of Waterproofing and		Glazed Mosaic, Ceramic, Quarry,	
Damproofing	☐	and Cement Tile	☐

SUBJECTS AND COURSES—Continued

Installing Tile on:		Slopes, Grades, and Stakes	☐
Floors	☐	Types of Soil and Effects on Earthwork	☐
Walls	☐	Materials and Their Applications:	
Drainboards	☐	Aggregates and Their Uses	☐
Ceilings	☐	Concrete	☐
Jambs	☐	Asphalt	☐
Curbs	☐	Application of Asphalt Pavement	☐
Gutters	☐	Application of Concrete Pavement	☐
Columns	☐	Shovel and Crane Type Equipment:	
Stairs	☐	Shovel	☐
Domes	☐	Crane	☐
Arches	☐	Clamshell	☐
Panels	☐	Dragline	☐
Fireplaces	☐	Backhoe	☐
Tile Classifications	☐	Gradeall	☐
Glass Mosaics	☐	Mucking Machine	☐
New Materials	☐	Excavator	☐
Other (specify)	☐	Pile Driver	☐
Operating Engineer:		Material Hoisting and Handling:	
Historical Background	☐	Equipment	☐
Safety and First Aid	☐	Cranes and Derricks	☐
Use of Tools:		Belt Type Conveyors	☐
Handtools and Gages	☐	Tractors:	
Power Tools	☐	Crawler Type Bulldozers and Rippers	☐
Shop Tools and Equipment	☐	Wheel Type Bulldozers	☐
Types of Instruments:		Graders:	
Leveling Instruments	☐	Motorized	☐
Measuring Instruments	☐	Towed	☐
Uses of Instruments	☐	Scrapers:	
Vehicle Code	☐	Self Powered Type Scrapers	☐
Rigging:		Towed	☐
Cable and Wire Rope	☐	Tandem	☐
Clamps and Fittings	☐	Self Loading	☐
Slings and Spreaders	☐	Land Levelers	☐
Blocks, Pulleys, and Swivels	☐	Loaders:	
Weight and Materials	☐	Front End	☐
Proper Lifting Procedures	☐	Side	☐
Introduction to Internal Combustion		Rear	☐
Engines	☐	Overhead	☐
Lubrication	☐	Compaction Equipment:	
Introduction to Basic Electricity	☐	Tandem, Three Wheel, Grid and	
Introduction to Basic Hydraulics	☐	Offset Rollers	☐
Converters	☐	Sheepfoot, Pneumatic and Wobbly	
Fluid Drives	☐	Wheel Rollers	☐
Gears and Reductions	☐	Vibrating Compactors and Tampers	☐
Transmissions	☐	Work Cycles:	
Introduction to Basic Pneumatics	☐	Advanced Concepts in Measurement	☐
Differentials and Rear Ends	☐	Understanding Plans and	
U-Joints and Drives	☐	Specifications in Earthwork	☐
Orientation to Heavy Equipment	☐	Job Methods:	
Construction Equipment Operators		Haul Engineering	☐
Grade Plans and Earthwork:		Ditches, Ditch Gradients, Earthwork	
Earth Moving	☐	and Equipment Selection	☐
Importance of Good Safety Practices	☐	Bids, Contracts, and Performances	☐
Measurements Used in Earthwork	☐	Dredge Operator:	
		Introduction to Dredging	☐

SUBJECTS AND COURSES—Continued

Types of Dredges	☐	Conveyors:	
Dredge Plant Components	☐	Types of Conveyors	☐
Dredge Operation	☐	Construction of Conveyors	☐
Seamanship:		Conveyor Parts	☐
Anchor	☐	Adjustment	☐
Small Boat Handling	☐	Alinement	☐
Compass	☐	Holdbacks	☐
Weather	☐	Hoppers and Loading	☐
Marinspike Seamanship	☐	Spillage	☐
Plant Equipment Operator	☐	Troughs and Skirts	☐
Rock, Sand and Gravel Operator:		Trippers	☐
Crushers	☐	Safety Devices	☐
Types of Crushers	☐	Inclines	☐
Batch Plants	☐	Capacities	☐
Processing Plants	☐	Shiftable Frames	☐
Concrete:		Rose Belt	☐
Grizzlies and Screens	☐	Extendible Conveyor	☐
Feeders	☐	Rough Loader	☐
Aggregate Washing and Separating		Stacker	☐
Equipment	☐	Controls:	
Kinds of Batching Equipment	☐	Type of Controls	☐
Batch Operation	☐	Operation of Controls	☐
Trolley Batcher	☐	Specialized Tools:	
Single Material Batcher	☐	Special Tools Needed on Batch Plants	☐
Aggregate Measurement	☐	Tools and Equipment Needed for	
Weigh Batcher	☐	Service and Lubrication	☐
Cement Weigh Hoppers	☐	Job Methods, Planning and Layout:	
Multiple Batcher	☐	Selection of Equipment for Job	☐
Batching Systems	☐	Selection of Materials Needed	☐
Fixed Plants	☐	Troubleshooting	☐
Mass Concrete Plant	☐	Job Problems	☐
Transit Mix Fixed Plant	☐	Methods of Measurement	☐
Plant Maintenance and Safety	☐	Heavy Duty Repairman:	
Asphalt:		Welding	☐
Central Mixing Plants	☐	Principles of Welding and Cutting	☐
Cold Aggregate Feeder or Hopper	☐	Oxyacetylene	☐
Cold Aggregate Elevator	☐	Electric	☐
Dryer Operation	☐	Soldering	☐
Dust Operation	☐	Preventive Maintenance	☐
Hot Elevator	☐	Safety	☐
Graduation Control Unit	☐	Internal Combustion Engines:	
Bituminous Mixer	☐	Engine Types	☐
Fines Feeder	☐	Stationary Parts	☐
Boilers	☐	Major Moving Parts	☐
Belt Conveyor	☐	Typical Diesel Engines	☐
Bucket Loader	☐	High Compression Gas Engines	☐
Bitumen Heater	☐	Auxiliary System	☐
Asphalt Kettle	☐	Crawler Track and Wheel Systems:	
Asphalt Distributor	☐	Frames	☐
Asphalt Tank	☐	Springs	☐
Trailer Tank	☐	Undercarriage:	
Liquid Storage Tank	☐	Track	☐
Water Tank	☐	Rollers	☐
Small Continuous Mix Plant	☐	Idlers	☐

SUBJECTS AND COURSES—Continued

Sprockets	☐	Convertors:	
1. Frames	☐	Uses	☐
Rebuilding Techniques	☐	Types	☐
Preventive Maintenance	☐	Charging System	☐
Safety	☐	Lockup	☐
Bases and Carriers:		Overrunning Clutch	☐
Stationary	☐	Heat Exchangers	☐
Mobile	☐	Types of Fluids	☐
Tires and Care:		Filter System	☐
Types of Tires	☐	Fluid Drive:	
Air Pressure	☐	Types of Fluid Drive	☐
Wheel Failure	☐	Service and Maintenance	☐
Tire Repair	☐	Gear and Reductions	☐
Brake Systems:		Multiple Speed	☐
Mechanical	☐	Multiple Drive	☐
Hydraulic	☐	Transmissions:	
Electrical	☐	Function	☐
Vacuum	☐	Gearing	☐
Brake Booster	☐	Gear Material	☐
Repairs	☐	Types	☐
Clutches and Frictions:		Disassembly	☐
Description and Operation	☐	Cleaning and Inspection	☐
Inspection and Maintenance	☐	Reassembly	☐
Minor Adjustments	☐	Adjustment	☐
Replace Clutch Springs and		Final Drives:	
Release Bearings	☐	Single Reduction	☐
Clutch Troubleshooting	☐	Planetary	☐
Steering Systems:		Differentials and Rear Ends:	
Conventional	☐	Single Reduction Axles	☐
Hydraulic Ram	☐	Two-speed Axles	☐
Electrical	☐	Tandem Drive Axles	☐
Clutch Brake	☐	Axle Shifting Systems	☐
Tracks	☐	U-Joints and Drive Lines:	
Wheels	☐	Types	☐
Legs	☐	Inspection	☐
Electricity:		Manual and Parts Book	☐
Coils	☐	Use and Familiarization	☐
Distributors	☐	Engine Principles and Theory	☐
Starter Motors and Controls	☐	Fuel Systems and Carburetion	☐
Alternators, Regulators, Generators		Air Intake and Exhaust Systems	☐
and Rectifiers	☐	Cooling and Lubrication Systems	☐
Heavy Duty Lightning Systems	☐	Electricity:	
Ignition Systems	☐	Theory of Electricity	☐
Storage Batteries	☐	Parallel Circuits	☐
Tune-Up Procedures	☐	Series Circuits	☐
Accessories	☐	Ohms Law	☐
Hydraulics:		Fundamentals of Electricity	☐
Introduction	☐	Circuits, Symbols, and	
Liquid Flow	☐	Conductors	☐
Pipe Fittings and Seals	☐	Relays and Switches	☐
Valves and Pumps	☐	Magnetism and Induction	☐
Hydraulic Systems	☐	Electrical Measurement	☐
Pneumatics:		AC and DC Generation	☐
Basic Pneumatics	☐	Motors	☐
Compressors	☐	DC Circuits	☐

UNION AFFILIATION—Continued

Primary and Secondary Batteries	☐	Symbols and Circuits	☐
AC Current	☐	Pumps and Motors	☐
Direct Current Motors and Controls	☐	Basic Valve Types	☐
Single and Three Phase Circuits	☐	Cylinder Structure	☐
Transformers and Regulators	☐	Type of Hoses	☐
Polyphase Induction Motors	☐	Seals	☐
Synchronous Motors	☐	Choosing Right Oil	☐
Set Synchronous Apparatus	☐	Purposes of Reservoirs	☐
Single Phase Motors	☐	Damaging Effect of Dirt	☐
Circuit-Protective and Switching		Accumulators	☐
Equipment	☐	Testing Criteria	☐
Electrical Instruments and		Checking Operating Times	☐
Measurement	☐	Primary Visual Checks	☐
Electron Tubes and Devices	☐	Bypass Testing	☐
Types and Sizes of Wire	☐	In-Line Testing	☐
Wire Connections and Joints	☐	Pneumatic Systems:	
Wiring of Heavy Appliances	☐	Basic Systems	☐
Isolated and Standby Power Plants	☐	Compressors	☐
Special Engines:		Portable Type	☐
Gasoline	☐	Construction	☐
Diesel	☐	Rating	☐
Steam	☐	Pressure Control	☐
Electric	☐	Heat	☐
Hydraulic Systems:		Rotary Compressors	☐
Basic Types of Hydraulic Systems	☐	Reciprocating Compressors	☐
Similarity to Air Pressure	☐	Operation	☐
Pascals Law	☐	Air Lines and Accessories	☐
Hydraulic Properties of Oil	☐	Air Motors	☐
Basic Hydraulic Pump	☐	Tanks	☐
Advantages of Hydraulic Transmission	☐	Governors	☐
Hydraulic Terms	☐	Other (specify)	☐

LICENSURE OR CERTIFICATION

Record an "X" to indicate licenses or certification required.

Federal	☐	City	☐
State	☐	Other (specify)	☐
County	☐		

UNION AFFILIATION

Record an "X" to indicate union affiliation.

International Unions:		International Union of Operating	
Bricklayers, Masons, and Plasterers		Engineers	☐
International Union of America	☐	International Union of Elevator	
Brotherhood of Painters, Decorators,		Constructors	☐
and Paperhangers of America	☐	Laborers International Union of	
International Association of Heat and		North America	☐
Frost Insulators and Asbestos Workers	☐	Operative Plasterers and Cement Masons	
International Association of Bridge,		International Association of United	
Structural, and Ornamental Iron		States and Canada	☐
Workers	☐		

PRODUCTS—Continued

United Association of Journeyman and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada ☐
 United Brotherhood of Carpenters and Joiners of America ☒
 United Rubber, Cork, Linoleum, and Plastic Workers Union ☐
 United Slate, Tile, and Composition Roofers, Damp and Waterproof Workers Association ☐
 Wood, Wire, and Metal Lathers International Union ☐
 Other (specify) ☐

Unions:

Acoustical, Drywall, Insulation, and Scaffolding ☐
 Acoustic Drywall Workers ☐
 Asbestos Workers ☐
 Bricklayers ☐
 Bricklayers and Masons ☐
 Bricklayers and Stonemasons ☐
 Bricklayers and Tile Setters ☐
 Carpenters ☒
 Carpenters and Joiners ☒
 Cement Masons ☐
 Cement Finishers and Plasterers ☐
 Elevator Constructors ☐
 Floor Layers ☐
 Glaziers and Glass Workers ☐
 Guniting Workers ☐
 Hardwood Floor Carpenters ☐
 Hod Carriers and Laborers ☐
 House Movers ☐
 Iron Workers ☐
 Iron Workers Ornamental and Architectural Local ☐

Iron Workers and Shopmans Local ☐
 Laborers ☐
 Laborers and Plaster Tenders ☐
 Lathers ☐
 Lathers Nail and Wood Local ☐
 Linoleum, Carpet, and Soft Tile Layers ☐
 Marble Masons ☐
 Operating Engineers ☐
 Operating Engineers Hoisting and Portable Local ☐
 Ornamental Iron Workers Local ☐
 Painters ☐
 Painters and Decorators ☐
 Painters, Decorators, and Paperhangers ☐
 Pile Drivers ☐
 Pile Drivers, Bridge, Wharf, and Dock Builders Local ☐
 Plasterers ☐
 Plasterers and Cement Finishers ☐
 Plasterers and Cement Masons ☐
 Plumbers ☐
 Plumbers and Fitters ☐
 Plumbers and Steamfitters ☐
 Reinforced Iron Workers ☐
 Refrigeration, Air Conditioning, and Fitters ☐
 Roofers ☐
 Shinglers ☐
 Shinglers and Drywall Installers ☐
 Sprinkler Fitters ☐
 Steamfitters ☐
 Terrazzo Workers and Machine Operators ☐
 Tile Layers ☐
 Tile Setters ☐
 Tile Marble, and Terrazzo Helpers ☐
 United Mine Workers, Construction Local ☐
 Other (specify) ☐

PRODUCTS

Record an "X" to indicate product produced.

Construction Products:

Abutments ☒
 Airports ☐
 Alleys ☐
 Aluminum Mills ☐
 Antennas ☐

Apartments ☒
 Aqueducts ☐
 Asylums ☐
 Athletic Fields ☐
 Auditoriums ☒
 Ball Parks ☒

PRODUCTS—Continued

Boilers	☐	Mine Loading and Unloading	
Bomb Shelters	☒	Stations	☒
Breakwaters	☐	Missile Facilities	☒
Bridges	☒	Mausoleums	☒
Canals	☒	Motels	☒
Canal Locks	☒	Museums	☒
Canal Gates	☒	Oil Refineries	☒
Caissons	☒	Parks	☒
Cemetaries	☐	Parking Lots	☒
Cesspools	☐	Piers	☒
Chemical Plants	☐	Pilot Plants	☒
Chimneys	☐	Pipelines	☐
Churches	☒	Pumping Stations	☒
Clean Rooms	☒	Radio Transmitting Towers	☒
Cofferdams	☒	Railroad Roadbeds	☐
Conduits	☐	Railroad Structures	☒
Culverts	☒	Rapid Transit Structures	☒
Curbs	☐	Refineries	☒
Dams	☒	Reservoirs	☒
Dikes	☒	Roads	☒
Drainage Canals	☒	Rolling Mills	☒
Elevators	☒	Recreational Buildings	☒
Electric Power Transmission		Residence	☒
Towers	☐	Single Family	☒
Escalators	☒	Multi-Family	☒
Farm Buildings	☒	Restaurants	☒
Factories	☒	Sewers	☒
Fences	☒	Sewage Plants	☒
Financial Institutions	☒	Shopping Centers	☒
Fire Escape	☒	Silos	☒
Flood Control Projects	☒	Stadia	☐
Freeways	☒	Scores	☒
Garages	☒	Subways	☒
Gas Mains	☐	Swimming Pools	☒
Golf Courses	☐	Television Transmitting Towers	☒
Grain Elevators	☒	Telephone Transmission Lines	☒
Harbors	☒	Transportation Terminals	☒
High Rise Buildings	☒	Tunnels	☒
Highways	☒	Viaducts	☒
Hospitals	☒	Waste Disposal Plants	☒
Hotels	☒	Waterways	☒
Houses	☒	Wharfs	☒
Hydroelectric Plants	☒	Retaining Walls	☒
Industrial Furnaces	☒	Sidewalks	☒
Industrial Ovens	☒	Storage Tanks	☐
Industrial Plants	☒	Structural Steel Framework	☐
Institutional Buildings	☒	Scaffolds	☒
Irrigation Projects	☐	Service Stations	☒
Jettys	☒	Windmills	☒
Kilns	☒	Other (specify)	☐
Laboratories	☒		
Levees	☒		
Libraries	☒		
Manholes	☒		
Marinas	☒		
		Systems:	
		Air Conditioning	☐
		Heating	☐

PRODUCTS—Continued

Piping:

Water ☐
 Air ☐
 Gas ☐
 Steam ☐
 Acid ☐
 Circulating ☐

Cooling ☐
 Plumbing ☐
 Refrigeration ☐
 Sprinkler ☐
 Steam ☐
 Ventilating ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS

Record an "X" to indicate machines, tools, equipment, and work aids used.

Construction Machines
and Equipment:

Canal construction machines:

Concrete joint machine ☐
 Canal liner machine ☐
 Canal trimmer machine ☐

Earth compacting machines:

Hydra hammer aero stamper ☐
 Roller compactor ☐
 Road pactor ☐
 Form tamper ☐
 Blob compactor ☐
 Tamping machine ☐

Earth moving equipment:

Backhoe ☐
 Loader ☐

Power shovel:

Backhoe shovel ☐
 Dragline shovel ☐
 Clamshell shoveler ☐
 Highline cable equipment ☐
 Remote control earthmover ☐
 Trencher ☐
 Skiploader ☐

Earth grading machines:

Push-pull scraper ☐
 Selfloading scraper ☐
 Motor grader ☐
 Bulldozer ☐
 Tractor loader ☐
 Auto grader ☐

Excavating machines:

Mass excavator ☐
 Wheel excavator ☐
 Tower excavator ☐

Paving machines and equipment:

Asphalt berm curber ☐
 Asphalt paver ☐
 Asphalt roller ☐
 Asphalt screeder ☐
 Asphalt spreader ☐
 Asphalt heater and planer ☐
 Concrete berm curber ☐
 Concrete curer ☐

Concrete lift slab ☐
 Concrete planer ☐
 Concrete spreader ☐
 Concrete mechanical finisher ☐
 Concrete mobile form traveler ☐
 Concrete slip form hydraulic
equipment ☐

Pavement breaker ☐

Pipeline construction machines:

Cast-in-place pipelayer ☐
 Pipemobile ☐
 Pipe wrapper, cleaner, bender ☐
 Tar pipelining machine ☐

Piledriver:

Floating piledriver ☐
 Mobile piledriver ☐

Tunnel construction machines:

Tunnel boring machine ☐
 Tunnel heading shield machine ☐
 Tunnel mucking machine ☐
 Tunnel mole boring machine ☐

Mixing machines:

Concrete mixer ☐
 Concrete batch plant ☐
 Concrete dual drum mixer ☐
 Concrete gun mixing machine ☐

Pumping equipment:

Cement pump ☐
 Concrete gun pump ☐

Concrete pumping machine:

Mobile concrete pumping
machine ☐

Drilling machines:

Well drilling machines:
Cable tool ☐
 Rotary Tool ☐
 Water well drilling machines ☐

Dredges ☐

Clamshell dredges ☐
 Pump dredges ☐

Hoisting equipment:

Truck crane:
Long boom truck crane ☐
 Tower crane ☐

MACHINES, TOOLS, EQUIPMENT, AND WORK AIDS—Continued

Elevator	☐	Brace and Bits	☒
Cherry picker	☐	Pipe Threaders and Dies	☐
Chicago boom hoist	☐	Pipe Benders	☐
Mobile lift hoist	☐	Roofing Knives	☐
Stiff leg hoist	☐	Linoleum Knives	☐
Tugger hoist	☐	Mops	☐
Tools:		Crowbar	☒
Handtools	☒	Pointing Trowel	☐
Drills	☒	Stone Masons Hammer	☐
Chisels	☒	Other (specify)	☐
Files	☒	Power Handtools:	
Knives	☒	Rivet Guns	☐
Rules	☒	Power Drills	☒
Scissors	☒	Power Actuated Fastening	
Tape Measures	☒	Devices	☒
Scribers	☒	Spray Gun	☐
Wire Cutters	☒	Calking Guns	☒
Levels	☒	Grouting Guns	☒
Mauls	☒	Guniting Guns	☐
Mallets	☒	Cement Guns	☐
Screwdrivers	☒	Power Saws	☒
Brushes	☒	Pneumatic Drills	☒
Wrenches	☒	Pneumatic Hammers	☒
Clippers	☒	Other (specify)	☐
Needle	☒	Equipment:	
Square	☒	Soldering equipment	☐
Trowels	☐	Brazing equipment	☐
Sawing Palms	☐	Welding equipment	☒
Hammers	☒	Tar Kettles	☐
Saws	☒	Lead Pots	☐
Brick Hammers	☐	Blow Torches	☐
Jointers	☒	Stud Welding Guns	☒
Brick Cutting Chisels	☐	Other (specify)	☐
Planes	☒	Work Aids:	
Straight Edge	☒	Blueprints	☒
Floats	☐	Sketches	☒
Whips	☐	Building Plans	☒
Darbies	☐	Architects Drawings	☒
Finishing Trowel	☐	Bills of Materials	☒
Pry Bars	☒	Work Order Specifications	☒
Shears	☒	Structural Specifications	☒
Serrated Trowels	☐	Construction Plans	☒
Floor Rollers	☒	Contract Specifications	☒
Putty Knives	☒	Compasses	☒
Hacksaws	☒	Chalk	☒
Bolt Cutters	☒	Plumb bob	☒
Punches	☒	Crayons	☐
Hatchets	☒	Grading Stakes	☐
Staplers	☒	Plumb line	☒
Pincers	☒	Transit	☒
Scrapers	☒		
Paint Rollers	☐		
Wallpaper Rollers	☐		
Reamers	☐		

ENVIRONMENTAL SETTING

Record an "X" after each item to indicate where the work is performed.

Agriculture	☐	Financial	☐
Commercial:		Government Service	☐
Business Service	☐	Industrial	☐
Food and Beverage	☐	Insurance	☐
Lodging Service	☐	Legal	☐
Personal Service	☐	Library	☐
Printing and Publishing	☐	Medical Service	☐
Repair Service	☐	Military	☐
Sales	☐	Nonprofit	☐
Communications	☐	Office Service	☐
Conservation	☐	Recreation	☐
Construction	☒	Social Service	☐
Correctional	☐	Subsurface and Space	☐
Educational	☐	Transportation	☐
Entertainment	☐	Utilities	☐
Exhibition Center	☐	Other (specify)	☐

LIST OF INVENTORIES INCLUDED IN SERIES I

Administrative and Management Occupations
Agriculture and Related Work
Air Transportation and Related Occupations
Architectural, Engineering, and Related Occupations
Clerical and Related Occupations
Counseling, Guidance, Social Services, and Related Work
Fine Arts Occupations
Inspection, Testing, and Related Work
Mathematics, Physical Sciences, and Related Work
Mechanical Repairing and Related Work
Medical and Health Services Occupations
Merchandising and Related Occupations
Motor Transportation and Related Work
Performing Arts Occupations
Photography, Communications, and Related Work
Physical Science Research
Pipeline Transportation and Related Work
Psychological Research and Related Work
Public Utilities and Related Work
Railroad Transportation and Related Work
Water Transportation and Related Work
Writing, Editing, and Related Work